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California Cultivator

Los Angeles January 3 1907 San Francisco

The Wyandotte Family

Pre-eminently the Breed for Broilers and Unexcelled as a Market Fowl—Good Layers, Setters and Mothers

By FRANK H. THOMAS, Los Angeles

THE WYANDOTTE FAMILY, comprising the White, Buff, Columbian, Silver Laced, Golden Laced, Silver Penciled, Partridge and Black is strictly of American breeding, although this breed has in its makeup the Hamburg and Dark Brahma. In size they are halfway between the two, and many of the present characteristics of shape, comb and disposition are traceable to either one or the other of their ancestors,

The wide range in color of plumage found in the eight varieties, give the fancier ample opportunity to practice his skill in producing specimens with markings as delineated in the American Standard of Perfection.

When bred according to standard requirements they are indeed a beautiful bird and are well named the birds of curves Every section from their beak to their tail should be a graceful curve, and indeed are very symmetrical when approaching perfection.

First Prize White Wyandotte Hen
Denver and Colorado Springs, 1905
Owned by Inglewood Poultry Farm, Inglewood, California

They should have a rose comb, set firm and low on the head, top oval and surface covered with fine round points; the entire comb and spike curving to conform to shape of skull, and should be bright red. The eyes should be bay or bright red.

They should be broad and blocky, with broad full-rounded breast. Legs should be strong and of medium length. The standard weights are, for cocks, eight and one-half pounds; cockerels seven and one-half pounds; hens six and one-half pounds; pullets five and one-half pounds.

The white variety is the most popular, and forms the largest class at many of our shows, both east and west. It is in fact taking the place of the California favorites, the White Leghorns.

They are certainly worthy of all the praise bestowed upon them for they are both practical and fancy. They are the fowl for the amateur and fancier, and unexcelled for the market. Their laying qualities, under proper care and management, have equaled the Leghorns and Minorcas, and they greatly excell them for market and table purposes. For broilers, they are ready for the market at any age and of any size required. They are at all times free from black pinfeathers, found in the dark varieties. For roasters weighing two to four pounds no birds excell and few equal them.

The silver variety is a very striking bird and at one time was bred very extensively, but of late years the newer varieties are taking its place. The Silvers were and are still bred by many in England and much of their beauty we owe to our English cousins, for they have improved their lacing very much, and many of the leading fanciers in this country are importing them to improve their flocks. This to many may seem absurd, but when it comes to producing lacing and colors we will doff our hats to our mother country. For practical purposes they are much the same as the white variety, excepting the dark pinfeathers.

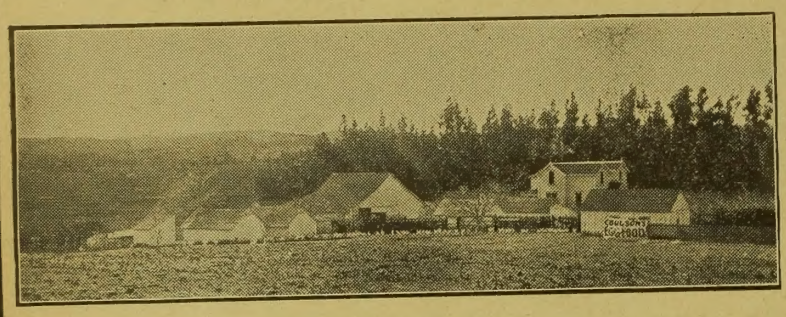
The Golden, Buff, Silver pencilled, Partridge and Columbian all have much to recommend them to the fancier, and their admirers are striving to perfect them along fancy and practical lines. The Buffs have many good qualities, and a Buff is always a favorite either for fancy or market.

The Columbian is the latest production, and bids fair to outdo many of the older varieties, We expect in a few years to see them in the front rank with the White variety. They should have the same markings as the Light Brahma, with clean yellow legs.

All Wyandottes are good setters and mothers, lay a good-sized egg, are good foragers, and do well in confinement.

Poultrymen

How Much does your Feed Cost You?



ONE OF OUR CHICKEN RANCHES

If you mix your own Mash Food for the hens, you will find that it costs you as much, or more, than if you feed

Coulson's Improved Mash Egg Food

A sack of ***Coulson's Improved Mash Egg Food*** will feed 1250 hens one meal.

1 Sack Improved Mash, about (Morning feed.)	$2.00
1¼ Sacks Wheat, about (Evening feed.)	2.25
	$4.25

Here is another way of feeding:

15 pounds Beef Scraps	$ .55
25 pounds Bran	.30
Sack Ground Chop	1.40
1¼ Sack Wheat	2.25
	$4.50

In the first instance you have a concentrated feed, containing all that a hen requires for health and egg-production, ready mixed for use.

In the second instance, you have the old method of feeding.

If the two ways cost the same, the first method of feeding COULSON'S IMPROVED MASH would still be the best, as it would save you time, and trouble of mixing, and get better results from your hens, owing to the greater amount of protein in the food, the perfect balance of the ration and the CONDITION POWDERS, which keep them in a healthy condition.

COULSON'S IMPROVED MASH actually costs less, however, and the reason of this is easy to explain. Being a highly concentrated feed, the hens require less of it, thus saving heir digestions, and the poultryman's pocket.

Feed your hens COULSON'S IMPROVED MASH EGG FOOD, and you will get a greater number of eggs with a smaller feed bill.

This is why COULSON'S IMPROVED MASH EGG FOOD has such a great and increasing sale. You had better get into line with the other poultrymen, use COULSON'S IMPROVED MASH EGG FOOD AND INSURE yourself a good profit.

For sale by all dealers, or at

Coulson Poultry and Stock Food Co.

Petaluma, California

Free Book "Raising Chickens" CUT THIS OUT

Coulson's Stock and Food Co.—Gentlemen: I will accept your offer of one of the books, "Raising Chickens," and enclosed please find 10 cents postage for same.

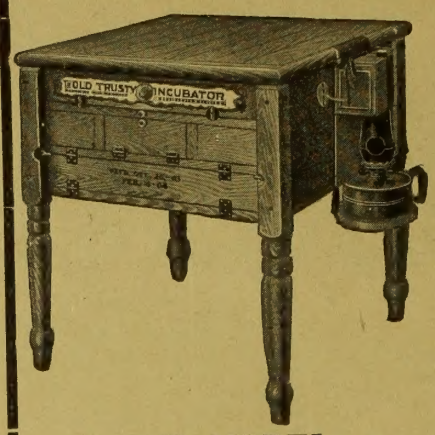
I now keep: No. of hens.....No. of young chicks.....

No. of turkeys.....Do you feed Coulson's Foods to your chickens?.....

My name is.....P.O. Address.....

Germain Seed Company

Agents for Southern California



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Free Incubator

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The McClanahan Co.

701, 703, 705 So. Main St., Los Angeles

El Oro Poultry Farm

Produces birds which show their worth as layers and as

Winners of Ribbons

At the Fresno Show this year they won:

Brown Leghorns—1st Cock, 1st Cockerel, 1st and 2nd Hen, 1st and 2nd Pullet. 1st Pen.

Buff Rocks—3rd Cockerel, 4th Hen.

Black Minorcas—1st and 2nd Cock, 2nd and 4th Hen.

Buff Cochin Bantams—1st Hen, 1st Cock.

Blue Andalusians—1st Pen, 1st, 2nd, 3rd and 4th Hen, 1st Cock, 1st and 2nd Cockerel, 1st Pullet.

Bronze Turkeys—4th Hen, 4th Gobbler.

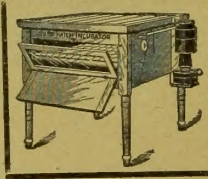
Buff Orpingtons—3rd Cock, 5th Hen, 4th Pullet.

Besides these, El Oro Birds won the Bankers' Cup for the greatest number of points of any one breeder, with 66 points; Special for Best Mediterraneans. Besides that, in another special these birds literally

Took the Cake

Eggs, $1 to $3 per Setting. Stock, $1 to $5 Each

El Oro Poultry Farm Fresno California



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Are known the world over for their ***Simplicity*** and ***Reliability***. It is useless to place in the hands of a novice a machine that would puzzle a scientist. That is what we do not do. We guarantee them for five years, and positively stand by the guarantee. Send for free catalogue No. 25. It is full of poultry matter.

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Chicks Just Hatched

We ship them everywhere. Pure Bred White Leghorn Chicks from the Best Egg Producers in the United States

MAXWELL, MAY 27, 1906.

CALIFORNIA INCUBATOR CO.,

Gent emen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come so far and being so long on the way without the loss of a single one, but it is an undisputed fact that such was the case We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. CAMPBELL.

CALIFORNIA INCUBATOR CO., 907 Washington St., Petaluma, Cal.

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BY USING A ***SUPERIOR GENERATOR***

The comforts of home are greatly increased by the cheerful ray of a soft, white light. Each flame is a little sun that sheds its bright rays to every corner of the room. ACETYLENE made by the SUPERIOR GENERATOR is perfectly odorless when burning and any escaping gas is quickly detected. No danger from explosion, because the gas is made only as used. No increase of insurance rates, as this gas is absolutely SAFE.

Special—Tell us the number of lights you use each evening and about the time they burn, and we will give you the approximate cost of installing one of our machines that will fully supply your wants for lighting and cooking. Write today for Illustrated Catalogue No. 3. **Superior Light and Heat Co., 151 No. Clarence St., Los Angeles**

California Cultivator

Vol. XXVIII—No. 1 Los Angeles, California, Thursday January 3 1907 Subscription $1 a Year

Poultry Raising in California

Prices for Eggs in the Past Five Years Have Steadily Increased. Some Practical Suggestions on How to Care for Poultry to Obtain Best Results in Egg Production

By FRANK H. THOMAS, Los Angeles, California

IN GOING over the statistics of the annual report of the Secretary of Agriculture some interesting data is presented with reference to the commercial value of eggs for the past five years.

These figures show that the average wholesale price for eggs in Chicago, for the year 1900 was 14½ cents; for 1901, 16 cents; for 1902, 20 cents; for 1903, 17 cents; for 1904, 20½ cents; for 1905, 22½ cents.

With the single exception of 1903, every year has shown a marked increase in the demand for eggs and consequently an increase in the average price. These figures show the increasing value of the poultry business and are markers for beginners in poultry work. It should be borne in mind that the poultry industry has not been overworked in the country. The supply has not been in excess of the demand. There has been no glut in the egg market for many years.

A largely increasing population creates a larger demand for eggs. And then, too, the people who live in cities and towns understand that eggs are cheaper than meat, and use them largely in substitute for that commodity. And the people who produce the eggs use more of them. Every condition which has made the price of eggs and poultry as meat high in the past, promises to continue long in the future, making the prospects for poultry and eggs better than ever before.

A Question.

A poultry dealer asked the question about Thanksgiving time, "Why is it that the price of eggs does not decline more in the country during the summer months." The answer is clear enough. The increased capacity of cold storage plants, where thousands upon thousands of cases of eggs are stored from March until winter. Competition among speculators keeps prices above what they would otherwise be. It is claimed that cold storage keeps the price of eggs down in winter. This may be true to a certain extent, but as a large portion of the hens of the country do not lay in winter the price of fresh eggs in winter is bound to be high enough always. The cold storage speculators buy when eggs are cheapest and when the price would be very low if the were not in the market. They secure to those people who would never get eggs in winter a price at least 5 cents in excess of the price they would receive under the old order of things. On the whole, cold storage is beneficial and has been the means of making the production of eggs more profitable.

Just now, as we in California are going into our winter, in fact are there, it is an important matter to know how to care for our birds in order to get the best egg product. In several of the eastern experimental stations this same subject is on trial. In Maine a number of breeds have been found to lay as high as 200 eggs in one year, and the results seem to indicate that by selecting and properly feeding the best layers for breeding purpose the average egg yield of a flock can be increased. This is done, of course, under strict test conditions, but it goes to demonstrate what may be done toward increasing egg supply where chickens are properly cared for. There are several things which may be done by every poultry keeper that will benefit his flock and not require an overexpenditure of time—where results will be obtained and consequently money saved.

Yield Wanted.

This is the time of the year when all successful poultrymen are trying to get a large egg yield, because when eggs are selling at from 40 to 50 cents per dozen it pays to give the hens good care and good feed. In selecting winter layers, pick out the long bodied, well devoloped females, and make their quarters as pleasant as possible. A dissatisfied bird is never a success. A house 16x10 is about the right size for fifteen birds. Such houses should be divided into two parts by means of a partition. Use one part for a roosting and laying room and the other for a feeding and scratching room. It is a good plan to have the floor in the feeding room covered with straw to the depth of six inches, but remember that the same straw should not be left in the house all winter long. It should be changed at least every two weeks and a weekly change is still better.

Regularity in feeding is one of the essential conditions to good egg results, almost as much as proper rations, and proper rations embraces such a wide field that a single article on that branch is necessary to properly cover the subject. Suffice it to say. hens need a variety of feed just as much as animals, or humans. They will never do well if fed continually on the same grain. They must have diversified articles. All the bulletins on this subject from the agricultural colleges, all the writers in the great farm papers, like Mrs. Basley, and others are pronounced advocates of frequent changes in poultry feed. Remember this: the essentials in successful poultry management are comfort, care and feeding.

Makes Hens Comfortable.

A successful poultry raiser was once asked what he did to make his birds always look fine as they did. He replied that he tried to have them comfortable every day from the time they were hatched until they left the farm. And this it has always seemed to us, is in a nut shell the secret of succesful poultry raising. If you will look around your neighborhood, no matter where you live, you will see that the best farmers are best poultry raisers; that is a branch of farming that always wins in the long run. If you can raise all the feed and grain that your chickens need, why do so, by all means, but don't neglect them while you are doing this, nor afterward. Better buy some from some less fortunate neighbor who has more feed than chickens. There are other things beside feed, too. Have you seen birds humped and shivering, day after day through the worst part of the winter? Did you think that those poor things were comfortable? Picture yourself in that condition and imagine how you would like it. We don't see how some men can crawl into a warm bed at night and sleep soundly until morning, while their live stock and poultry stand half frozen all night. Their feelings must be pretty well blunted. It doesn't pay in dollars and cents, either. Now, it doesn't cost much to fix up a comfortable shelter for poultry, when old straw can be had for almost nothing. When a man lets his stock of any kind suffer from the cold, it is a clear case of shiftlessnes. If this hits you, reform at once.

Prize-Winning
White Leghorn Cockerel

One of the hindrances of good egg production is:

Over Fat Hens.

Can hens be made too fat to lay? Ask one of your neighbors, and he will say that it is a fact, that it is possible for hens to put on an amount of fat that will effectually put an end to egg production. The neighbor on the other side of you will ridicule the idea. He feeds his hens all they can be made to eat, and yet gets more eggs than an acquaintance of his who is full of what he regards as the crazy notion that his hens must be fed sparingly if eggs in paying quantities are expected of them.

This is a subject over which there has been much controversy, and yet we are tempted to say that there is nothing to dispute about. Hens can be made too fat to lay by injudicious feeding at certain times of the year, and at other times they can safely be allowed all the food they will consume.

Everybody knows that hens lay very few eggs during the molting period. The majority of hens lay no eggs at all at that time. The hen is then shedding her old feathers and putting on a new suit for the winter. Her food at this time should largely consist of a kind which enters into the making of feathers. In other words, it should be food which is rich in animal matter. Nature has made provision for this in the abundance of insect food with which she has filled the fields and groves at this time. Hens that are given the freedom of the range will find a banquet all ready prepared for them which is exactly suited to their needs. If compelled to subsist upon this almost exclusively the molting process will go on very rapidly, and will be done with in time for early winter laying.

Heavy Feeding Injuries.

Heavy feeding with grain at this time will cause the hens to lay on fat very fast. Grain food does not contribute in any large degree to feather-making, and as the hens are not laying while the feathers are being renewed, such food does not enter into the composition of eggs. Consequently it is stored up in fat until the internal organism of the hen is so encumbered with it that it is a mechanical impossibility for her to lay. Such feeding makes the hens worthless as layers just at the time when they have reclothed themselves with a new suit of feathers, and ought to be in prime condition for the winter's work. The consequences are even more serious than this, as extreme fatness is the same in its effects as a disease, and leads to the "breaking down' or death of a large proportion of the flock.

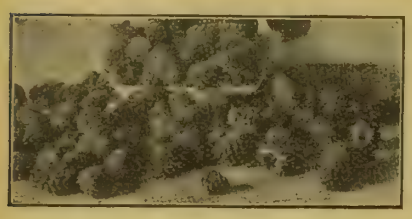
In the vast majority of cases these ill effects are brought about by heavy grain feeding during the molting period. When the hens have completed that process and have commenced to lay they can be fed what they will eat without risk, provided they are made to take a reasonable amount of exercise. It requires a considerable amount of food to meet the bodily demands of a hen that is laying an egg every other day, and it is next to impossible for her to be overfed at such times if anything approaching good judgment is exercised in giving her the variety of food suited to her needs.

Individual Preferences.

There are as many personal preferences in breeds as there are breeders. No special rule can be laid down to govern individual tastes. The great poultry shows this fall will furnish abundant opportunity for inspection and call out the votaries of the different classes of birds in advocacy of their specially showy points. Almost any breed will win if the owner likes it and cares for it as it should be cared for. But the best will fail if a slip-shod method is pursued in caring for it. So select the type you like best, study it and its peculiarities, and then adapt yourself to it.

There is as much success in adaptability as in knowledge, and above all the highest endowment and the most essential requisite is a good big bump of common sense. Poultry readers of The Cultivator, have you that bump? If not, you will waste time and dismally fail in the poultry business.

NEWBERT'S PHENOMENAL BERRIES



The most up-to-date berry on the market. They will clear you more money to the acre than any other berry you can grow. $750 clear profit has been made from one acre of these berries. The market price has been from 75c to $1.50 per crate of 16 half-pound baskets. I have taken ripe berries from my vines by the first of May.

Young Plants—I have for sale this year plants that I will guarantee will grow you large and healthy vines. **Prices**—I can furnish large orders on short notice. Price per dozen $1.00, per hundred $7.50.

My plants are rooted from the tips, and will make you a strong and fast-growing vine. Order at once to ensure delivery.

F. M. NEWBERT'S
Poultry and Berry Farm
Palmetto Av., Sacramento, Cal.

To get actual size of the "Phenomenal" measure 2 inches lengthwise and 1 inch in width, then draw a circle around the points.

SEND FOR THE

Up-to-Date Berries

IN CALIFORNIA

CATALOGUE NOW READY

A. Mitting Santa Cruz California

Proof of Its Worth
Is The
Profit It Brings

One of the most profitable fruits yet cultivated in California is the

Signal Hill Advance Dewberry

A wonder in earliness, wonderfully prolific, consequently most satisfactory as to profitableness. First berries marketed last year in March brought 35 cents per box and from that down to 8 cents at the beginning of the ordinary Dewberry season.

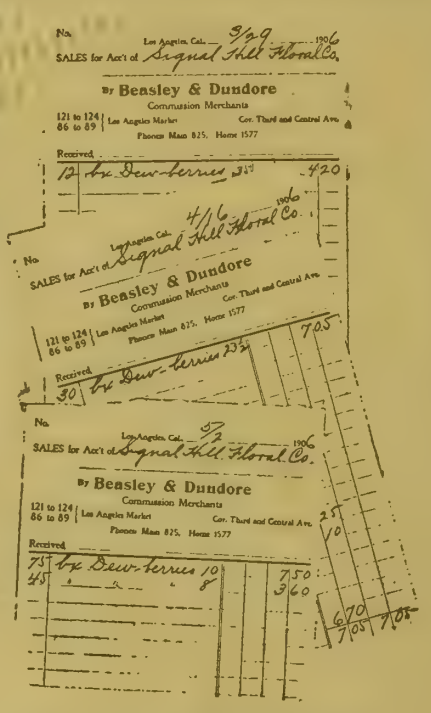
A few plants will be offered for sale this year. First orders in will have preference in being filled. Delivery of plants will commence on December 1st. December and January ideal months for planting.

PLANTS NOW READY

Singal Hill Advance Dewberry
Per Dozen, $ 1.50
" Hundred, 10.00
" Thousand, 50.00

Gray's Gardena Dewberry
Per Hundred, $ 1.50
" Thousand, 10.00

Signal Hill Berry Farm
249 So. Los Angeles St., Los Angeles, Cal.



Proof of the profit it brings in the credit slips of commission houses returned to Mr. Meserve last spring.

Cause and Effect

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Accept no substitute; insist on having "MOCOCO"

The Star Oil Burner

The Star Oil Burner is a simple, safe and economical device for taking the place of wood or coal in all cook stoves, ranges and heaters, without more soot or smoke than from a wood fire.

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218 West Sixth Street · · Los Angeles, California

Deciduous Fruit Culture

By J. W. MILLS

Bud Destruction

WE ARE often admonished not to kill the birds. But there are birds and birds. There are some birds that should have every possible protection in all places, some which should have as much in one place and should be destroyed or kept down to few numbers in other places. The quail belongs to this last class. But there is the linnet. What good is there in it except its song. For those who do not have a family garden, he is good company and is always ready with a sweet song—provided your near neighbor has some fruit just getting ripe.

But it is not only the fruit that he destroys. It is in the bud destruction that he does the most damage. Should he only pre-empt your garden for fruit, it would be but a short time that you would have to watch him. It is only when the fruit is green that the small fruit grower is free from his depredations. When the leaves drop in the fall, he is at the fruit buds and will fill up the embryo blossoms twice a day. Apricots and almond buds are his favorite, but apple buds are used as a change of diet occasionally.

A man with a gun will keep them away if a regular patrol is kept up. Water poisoned with strichnine is the best remedy provided no other water is available for the birds. This placed in shallow pans sunk even with the surface of the ground and with some dirt in the bottom to make it appear natural will do the work. Put in pure water till the birds get the run of it for several days and then change it for poisoned water. It is useless to try this method except during periods dry north winds or during weather that goes with them.

FERTILIZING WALNUTS.

Many forms of fertilizer have been tried on this very profitable crop, but so far without much success. Horse manure, sheep manure and many different brands and formulas of commercial fertilizer. So far, chicken manure or guano has given the best results. Mr. Collins, vice-president and soil expert for the Agricultural Chemcal Works, Los Angeles, discovered in inspecting the walnut grove of Mr. A Miller at Los Nietos, that the walnut tree in which the chickens were in the habit of roosting and where their droppings were thick on the ground was particularly thick spurred, full of large leaves, bark, white and smooth, indicating perfect health. Mr. Miller, who has a beautiful grove, said he picked 250 pounds of nuts from this particular tree, and what is more important, has never failed to pick from two to three times as many nuts as from any other tree in the grove, all of which are the same age. Not being able to obtain sufficient hen manure to fertilize his grove, Mr. Miller had made for him a fertilizer composed of the same elements as chicken manure, in the same relative proportions, with which he has fertilized his grove, applying same when he sowed his peas for cover crops, using a drill specially made for the purpose. Needless to say these results will be watched carefully by many walnut growers.

AGE OF GRAPE VINES.

We were asked recently, how long grape vines will live and bear. This is something which we cannot answer with much satisfaction. However, they are known to retain their bearing qualities in this State for over fifty years as witnessed by the Carpinteria vine which bore something like three tons one season when it was about fifty years old. It has the advantage of being alone and can draw on an unlimited area. Muscat vines in the Sacramento valley, over thirty years old are still productive and profitable. Some of the old mission vines near San Gabriel were alive at 175 years of age under such trying conditions as would kill most plants.

To Cure a Cold In One Day.
Take LAXATIVE BROMO Quinine Tablets. Druggists refund money if it fails to cure. E. W. GROVE'S signature is on each box. 25 cents.

SUGGESTIONS ON PLANTING ORCHARDS.

There are many things to be considered in starting a fruit plantation but the following are among the more important: choice of varieties, selection, setting out, source, and care of the trees, the laying out of fruit plantation, the soil, and location.

The choice of varieties is very important and more so in the southwest when the question of injury from late spring frosts is considered. While more questions are generally asked upon this phase of fruit growing, the selection of varieties depends largely upon the personal perference of the grower, upon the purpose for which the fruit is to be grown, and upon the locality. In asking or giving definite advice about varieties one should have knowledge of these three elements and the grower should ask for specific information, such as, "What is the best commercial red winter apple or best late white European grape," instead of "What fruit shall I plant in my orchard.?"

In selecting varieties, so far as possible, select those you like best. Ascertain whether you want the fruit for desert, for canning, for the local trade, for shipping or for keeping purposes, also whether you want early or late ripening kinds. Choose the varieties best suited to meet your ideals.

Do not plant, at least on a large scale, a variety simply because it does well in another place, until it has proven its worth in your locality. Remember that varieties may do well in one section and poor in another. If a variety does very well in the east, it is likely that it will not do as well in the west. The matter of diversification in fruit growing must come to be more and more important, and any region should grow those varieties which do well there.

Varieties should also be selected with reference to the local environment. The adoption of the variety to the particular climate and soil, to the length of the season, to the system of cultivation, and irrigation should be considered. As a rule the finer the variety in quality the less likely it is to thrive well under diverse conditions.

The choice of varieties with reference to inter-pollination is now considered important. Many varieties are self-sterile, that is they do not produce fruit with their own pollen. This may be due, as in the case of the strawberry, to the imperfect flowers, and frequently to the pollen not being potent upon its own variety. If only seif-sterile varieties should happen to be planted, the plantation, other things being equal, would produce small crops. The unproductiveness of plantations due to self-sterility can be largely overcome by planting alternate rows of the different varieties.

In selecting the trees care should be exercised to secure first-class trees of the type of the varieties selected, and trees that are well grown, vigorous, free from disease or blemishes. The tree may be straight and smooth or it may be crooked and gnarly, all this depends upon the variety. Because a tree is crooked it is not necessary that it is a poor specimen. That may be characteristic of the variety. Buy first-class trees which are of medium size for their age, shapely, stocky and with abundance of roots free from disease, such as root gall or black knot. It is often thought that large size is of itself a great merit in a nursery tree. This is not always true. Vigor, and stockiness are more important than mere bigness.

The age at which trees are bought depends on circumstances and on the variety. Trees are bought too old rather than too young. Most apples and pears are large enough when two years old from the bud, while one year-old peach trees are preferable. Nothing is gained by planting the two-year-old peach trees in this section. The results at the Station with the one and two-year old peach trees have been in favor of the younger trees.

People often ask whether they

Continued on page 9

TREES

True to Name

The demand for all sorts of fruit trees promises to be heavier than ever before. Place your order now, before our assortment is exhausted.

Deciduous Fruit Trees

We have this season a superior stock of

PEACHES PLUMS
PRUNES PEARS
APPLES APRICOTS
CHERRIES OLIVES
NECTARINES

All grown under our personal supervision in our Nursery Plant No. 3, which has a rich river bottom soil, permitting the most perfect roots.

Citrus Trees

All grown at our Citrus Nurseries in the Great Thermal Belt near Exeter.

Nut Trees

ALMONDS WALNUTS
PECANS

In all the leading varieties.

Grapes

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With the Citrus Growers

By J. W. MILLS

The Reed System

A PROSPECTIVE planter writes us that he wants to have the latest there is on the Reed system of planting orange trees. He has been informed that trees planted on that system require more water than trees which have been more sparingly watered during the earlier period of their life. Water costs money and if the trees do require more water if started after the Reed system, is it policy to start a tree on that plan.

We do not know that a tree started on the plan practiced by Mr. Reed will require more water than one started the usual way, if the trees grown under both systems are the same size at a later date when the item of water is a consideration. There is one thing certain, for one reason at least, the Reed tree will require more water than the other after the first year, both trees being the same age, and that is the former will be the largest. This is under ordinary circumstances. Under the ordinary system of planting, it is impossible for a tree to be as large at the end of the first year because it is not so large to start with and it is impossible for a tree to start and make the growth of the Reed and there it is that it falls behind again. At the beginning of the second year the ordinary tree is so far behind the other that it is a physical impossibility for it to catch up. At this time the Reed tree has some fruit on it, it has sent its roots out so that they about meet between trees and a vigorous rampant growth is spreading out in every direction. It requires more water than the other tree of course under these conditions, but the satisfaction and profit derived from such trees are worth more than the cost of the extra water. What do we raise orange trees for any way? Not to keep their growth and the profits down to a certain limit. We prefer the other view.

It is true that some of the best orchard managers put their young trees on a short allowance of water in order to tempt or draw some of the roots down to a deeper level where the trees may draw on the lower soil moisture and thus enable them to go through the dry summer with less frequent irrigations. We never have seen a case where this was practiced without loss in tree growth. It it pays to buy fertilizers to grow more fruit, it ought to pay to put on extra water to grow more tree in order that we may be compelled to buy more fertilizer to get a bigger crop the following year so that we may get more money to buy more water with to grow a still bigger tree with. This philosophy has been used by others.

In an experimental orchard that was planted at the Pomona station a few years ago, trees planted on both plans required no water at all during the second summer and there seemed to be no difference in the appearance of both sets of trees at the end of the season, except in size. These trees were planted in a fine sandy loam that is very retentive of moisture and during the twelve years in which the University had charge of the station clean culture was never practiced. No regular green manuring crop was planted, but all sorts of indigenous plants, among which were always several varieties of clovers and lupines grew regular every year. The soil was full of humus and with frequent cultivation after a season of abundant and late rainfall, no irrigation was required.

The Reed method of planting orange trees is as follows:

"Vigorous trees are selected in the nursery and well watered before removal. The longer branches are but slightly cut back, leaving most of the foliage on. The trees are then lifted and taken directly to the plantation where holes two feet deep and two and a half feet wide have been prepared, into which they are placed, and the earth is well filled around each ball, not firmed but settled with water so that the trees will stand at the same height as they did in the nursery. No planting should be done unless there is water for irrigating available at the time. After the ground has been soaked for several feet on all sides of the newly set tree, thorough cultivation should follow as soon as the land is in proper condition.

A small amount of fertilizer is applied soon after planting, for the new roots to use when they first start out from the balls. A pure bat guano with a high percentage of nitrogen, about three quarters of a pound to the tree, has been found to give the best results, but any commercial fertilizer rich in nitrogen or animal fertilizer, if placed properly and kept moist, answers well. It is applied in trenches each side of the ball, at right angles with the irrigation ditches and reaching to them. They may be made by plowing a deep furrow and deepening with a shovel to ten or twelve inches. This is carefully distributed and slightly mixed with the earth at the bottom of the furrows; water from the irrigation furrows keeping this always moist, it is available as soon as reached by the rootlets. This also tends to deep rooting. Thorough irrigation should follow planting every twelve or fifteen days during the first summer. The whole space between the rows should be thoroughly and deeply wet, not merely a narrow strip on each side of the rows. I have traced roots that have grown during the first summer, over six feet from the tree, and these should be well supplied with moisture at all times." The above is quoted from Mr. Reed as given to us.

ORANGE CULTURE.

Though taking its inception in the warm belt of the Southern counties of the State, citrus culture has gradually found its way farther north year by year, until at the present writing, oranges and lemons are successfully grown within the very shadow of Mount Shasta; in Arizona, notably the Salt River Valley, and in many portions of Old Mexico. The sheltered nooks and interior Valleys of the Sierras, the thermal belts in Placer, Kern and Tulare counties, the regions free from biting frosts in the great valleys of the San Joaquin and Sacramento, all furnish conditions of soil and climates in which the orange and the lemon luxuriate.

Planting can be done from February to August, but preferably during the early Spring months. Distance apart is somewhat governed by varieties. The Dwarf can be planted as close as 10 feet, the budded varieties 24 feet, and the seedlings, 25 to 30 feet. Thorough cultivation and judicious irrigation are essential to best results. Trees should be trained to form a symmetrical head, hence pruning is somewhat limited to cutting out the dead wood, interfering limbs and suckers. The Lemon requires more severe treatment, owing to its scraggly growth; the treatment given the average deciduous tree, possibly not quite so severe, will be found about correct.

IRRIGATING TREES.

Water is probably the most important factor in the success of growing trees. Most of the failures in starting shade trees seems to be due to the insufficient amount of water the trees get. Immediately after the tree is planted it should be thoroughly watered or irrigated, especially if the soil is dry. In about twelve to fifteen days the trees should be irrigated again and in about a week thereafter, or as soon as the soil begins to dry, it is well to go over the trees and pack the soil around them, which tends to crack open. The subsequent irrigations should be frequent, at least, till the trees becomes well established. This is especially important in the case of deciduous trees.

The actual shipments of oranges for last season from Southern California were 22,175 and 3788 cars of lemons. The lemon crop promises to be quite a little larger than last year and our estimate on both varieties of citrus fruits is as follows: Oranges, 22,000 cars; lemons, 4200 cars.

Who waits until the wind shall silent keep
Will never find the ready hour to sow;
Who watches clouds will have no time to reap.

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Live Stock and Dairy

By Mrs. Minna E. Sherman, Fresno, Cal.

Butter Making

WHERE a large number of cows are kept the irregularities of the individual cows are little noticed. The large dairyman is often surprised at the things the man keeping two cows tells him about, for instance, the way certain feeds act. He had not discovered that there was a wide difference between his cows at all As a rule the large dairymen feed too little, and the keeper of a couple of cows over-feeds them. Nearly all the cow stomach troubles that come to me through the Cultivator are cases of over-feeding. No feed will increase the natural capacity of the cow, when she is up to her limit the rest of the food is simply wasted.

Food does not directly affect the butter produced. The amount of milk produced is dependent on the character of the feed to this extent, that succulent feeds like grass and corn silage, make a larger flow of milk and as the milk increases the butter fat carried by it is also increased. In other words, increasing the amount of milk produced not by making the milk richer, or of higher per cent. of butter fat. The man who thinks that cows give the same per cent. of fat at all times is also greatly mistaken. They average it, even in the most regular milkers there occurs unaccountable rises and falls in the amount of fat produced from day to day. A cow gives the largest flow for three months of the lowest per cent. and then steadily the per cent. of fat rises as the flow diminishes, a cow starting at three per cent. will be apt at the close of her milking period to give as high as five and a half per cent.

Farm Butter Making.

In the large dairy the milk from the fresh cows is mingled with the milk of those going dry—one offsets the other in the mingled cream—a separator is in use, the cream is evenly ripened in a larger mass and the churning is easily accomplished in thirty minutes. The farmer's wife finds making butter a different matter from this, as she has to struggle along in all sorts of unsuitable places without conveniences. Now I want right here to say that the ordinary work of a butter maker in a creamery is not as hard as women are doing every day in California. I should like to see some girls in the dairy school at Berkeley, there is plenty of work in the private creamery where 200 cows are kept to give a woman work that is well paid and suitable to her strength. The modern appliances make it easier to run and easier to clean than one's kitchen. The ordinary engine and boiler in use is not any harder to understand than the kitchen range and sewing machine, these no one doubt that a woman can run all right.

In California during the rainy season, the farmer's wives find it almost impossible to keep the milk pans in a place of suitable temperature. Bacterial growths are rampant all around. I found yesterday my best kid gloves that laid away in a room without fire, were spotted with mildew. The right temperature, a want of fresh air and a floating spore for seed had ruined the gloves.

Now when the warm milk comes in it is strained into pans and placed in a room where the temperature is about fifty-five or a little less, the natural souring produced by the lactic acid bacteria life action in the milk, is checked and some of the "forty-nine" wrong kinds that should not be developed start up into life; the cream rises already charged with them and they are stirred into the cream jar and more and more develop until they reach into billions and the entire batch of cream is tainted.

Worse than all this is that everything the cream comes into contact with will be tainted, and require to be made antiseptically clean before the spores are gotten rid of.

First Care With Cow.

The first care must begin with the cow she must have wholesome food clean water and a dry bed. She must be clean, if her back and thighs are plastered with manure, it will be hard to have sweet clean tasting butter. If she is in this condition, use the first bright day to soak off the dirt with water and then clip the hair close on the legs and udder. If you can borrow a horse hand clipper the work will be easier. A pair of sharp scissors will do the work if you have a comb to cut against. Then provide a dry place for the cow to sleep. If the stable has only a dirt floor it will only take a few wheelbarrows of dirt to make a reasonably clean place for her to lie down on. A four-foot stick of oak fire-wood if there is no sill behind her, will answer better than nothing. Place it so that it will raise her stall up, stand her in the stall and find how long the stall should be, then place the sill so her hind feet will rest on it when she stands up to the manger, then fill in with earth in front to the top of the sill and wet it and tamp it a little. On the outside of the sill drive down some sharpened stakes to hold the sill in place, and then dig a gutter a little deeper than the passageway, about ten inches wide at the top and sloping to five inches at the bottom and five inches deep now if the cows' filled-in stall stands four or five inches above the floor of the passage the gutter will be deep enough to hold considerable droppings the height of the sill will lift her hips when she lays down above the manure and she will stay clean.

The best deoderizer is gypsum or land plaster, but fresh dry earth will answer if this is put into the gutter when it is cleaned and removed every day. The liquid manure will be absorbed by it and saved to use in the garden. Now where the cow is not in stanchions it may be necessary to shorten up her chain to keep her clean but make up your mind once to have her clean and the way will solve itself. Keep her clean if you hope to keep the badness out of the milk and cream. I read the following somewhere, I hope it was not in the Cultivator: That in an experiment with milk, a sample was milked and held under antiseptic conditions. The milk was tasted by a committee of three, it was known to be pure, yet they all agreed it was not good. The expert tried again and again, to have the milk taste right but he alway

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failed. Then in disgust he took a pinch of dry manure from the gutter of the cow barn and stirred it into the milk afterward straining it. Again the set of samples were tasted and all pronounced flat until the last was reached, this was said to be fine. Needless to say, it was the sample flavored with extract of stable filth. Where one is accustomed to the milk of a number of cows they dread the taste of one cows milk, knowing that it will be apt to be "cowy." Try tasting the milk on the table critically. Milk is a mild, almost tasteless fluid, slightly sweet and should not taste at all like a cow stable smells.

BUTTERMAKING ON THE FARM.

Fred Rasmussen of the Iowa Experimental Station, in discussing the subject of butter-making on the farm says that on account of lack of uniformity in flavor, color or salt, the grocer to whom the bulk of farm made butter is sold, is unable to dispose of it for private consumption, but sends it to the renovating factory where it is worked over, purified, made up into uniform packages and again put on the market.

Farmers in California suffer the same loss in price for inferior butter as do the farmers of the middle West. They are compelled to take less for it because of its inferiority, often having to exchange it for merchandise at the store receiving about one-half its selling price after it has been renovated at the factory. The renovator is the only party who makes a profit on this butter, as he is able to hold it in cold storage either before or after it is remelted, and thus put it on the market when butter is scarce. It then often sells for only a few cents less than creamery butter.

This should not be so, for the farm, in many respects, is an ideal place for making butter, because full control can be had of all the essential steps involved, from the milking of the cow until the butter is placed upon the market. It is understood that condition and equipments are often poor, but, if it is desired to continue to make butter, it will pay to improve the conditions so they will become more suitable.

Care of the Milk.

The care the milk and cream receives before churning will determine the flavor, says Mr. Rasmussen, which is the most essential quality of butter, as it is used more as a relish than as a food. Faults that butter may have, aside from flavor, are all due to carelessness or lack of skill in the process of making. If the underlying principles of butter-making are understood, it is not a difficult problem to make a uniform grade of butter from day to day. As long as the agricultural and dairy papers, dairy schools and experiment stations answer free any inquiry, and can explain the cause of most difficulties, there seems to be no excuse for making so much poor butter on the farm. It takes the same labor to make spoiled cream into butter and do it without paying attention to temperature, overchurning, proper working and salting, as it does to churn well-ripened cream and do it in an intelligent way. The difference is that in the latter case about twice as much per pound of butter will be received, and butter-making is made a paying business.

Intelligence Needed.

There never was a time when so great a premium was paid on intelligence as there is today. Many people have enough money to buy good commodities, and for such there is a strong demand, even at high prices. Especially is this true of farm produce. Near every town invariably there are some people who receive more for their goods than do others. The main reason is that those people deliver a uniform product, an article that is always up to the standard, put up in a neat, attractive way. It is marked by an individuality for which the consumer is willing to pay. There is an unwritten guarantee with such an article. The producer established a reputation by skill, intelligence, and honesty. He knows that to try to put out an inferior article under the special brand would be folly, as the small temporary gain would be insignificant compared with the loss it might bring in the future.

Attractive Form.

Like Mrs. Sherman, the writer holds that next in importance to making a uniform grade of butter is to put it up in a neat, attractive way, and bring it to the consumer's attention. This can be done by putting up the butter in one-pound prints, neatly wrapped in parchment papers, upon which is stamped the name of the farm or a special name under which the butter is sold. A great deal can be done to distinguish the product by some attractive feature. It should be something catching, suggestive, easy to remember, so that thinking of butter, a certain name or picture that has been seen once in such connection readily presents itself to the mind.

Butter should be made so that there is no necessity for making it over. The fewer middlemen between the producer and consumer, the greater the profit to the producer. Interurban roads are being planned, and built in all parts of the country. This means increased shipping facilities, which enable the farmer to profit by the demand in the city for unformly good farm produce. If better methods of making and warketing farm butter are applied, the present amount of renovated butter will be a thing of the past and the money it takes to operate the renovating factories and their profit will go directly into the farmer's pocket.

But this condition can only be reached when the farmer is brought to understand that his butter must be made as good as the creamery product both in flavor and in form. "Anything worth doing is worth doing well," and when this fact is applied to country butter-making, the farmer will be in position to receive the profit which the factory now obtains.

Queries

Kicking Cow.

Will you tell me how to cure my cow of the kicking habit. She is young and somewhat vicious. B. P. E. —Glendora.

Here is what Hoard's Dairyman says on this subject.

"We read of all sorts of devices to cure kicking cows. Like balky horses, kicking cows are usually made so by the men who handle them. The best device we have ever seen is to put a ring in the floor overhead and with a halter on the cow draw her head up pretty taut. She can not kick very well in this position, and the beauty of it is she does not know what it is that prevents her, as she soon comes to know if a strap is buckled about her legs."

Tying Cords.

Please give me some method for tying cows in barn. Will cows raised on the range do well if tied in barn? D. A. W., Hynes.

The cow, range-raised, does not take kindly to stanchions. We had strong round poles placed upright in pairs between each cow and against the mangers. On these iron rings that moved easily up and down were placed, a short chain connected the ring with the chain on the cows neck, she was tied from both sides with about four inches of play in the side chains, this allowed her to move that much to each side as well as that much back from the manger, when she laid down the rings dropped down and when she got up they rose with her. The side chains must be short or she will get tangled by putting her front foot over one of them.—M. E. S.

Churning.

I cannot get butter from the last three churnings. Have tried a higher temperature than 62, soda, salt and lime water all to no purpose. Is there no remedy for the gas in the cream which makes it foam? The cow has been fresh since August; is in good condition, with stable and dairy utensils kept very clean. She has been fed upon dry alfalfa until lately, when it has been mixed with oats and barley hay.—M. E. B. G.

The remedy for gas is not to allow it to form in the cream. In California at this season of the year this is not easy to do. I used to manage mine in this way, add a quart of hot water to each pan of milk holding a gallon or at the rate of a quart of water to a gallon of milk. Set the pan in a pan of

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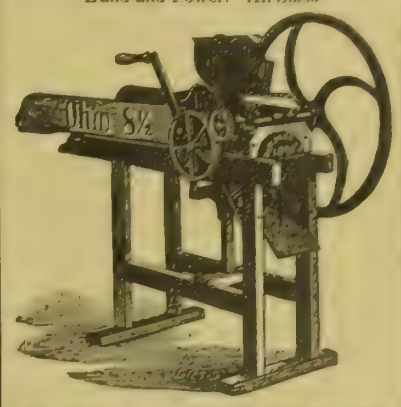

This cut represents the Ohio Hand Feed Cutters, made in two sizes with 9½ and 10½ inch knives. They are light, but very strong and serviceable. Will cut hay, straw and dry, hard corn fodder, consequently they are the best general purpose hand machines manufactured. *Catalogue of Full Line Free on Application. Write to*

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For Chicken Pox and Swelled Head

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The name "West Coast" stands for the best that can be made, and at reasonable prices. West Coast goods are for sale by dealers everywhere. If yours does not keep them send direct to us. Anyway, send for Free Booklet, "How to Make Your Live Stock Pay." Also Sales Agents for the

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The Best Spraying Device Made. We also buy in Carload Lots and sell at wholesale at the lowest market prices Willow Charcoal, Eastern Oyster Shell, Clam Shell, Beef Scraps, Poultry Bone, Bone Meal, Meat Meal, Blood Meal, Soluble Blood Flour, Oil Cake Meal, Caproca Meal, Alfalfa Meal, Hemp Seed, German Millet, Granite Grits, Marble Grits, and in fact a full line of Stock and Poultry Supplies.

West Coast Stock Food Co.

818 San Fernando St. (through to Alameda) Los Angeles, Cal.

hot water put both on the fire and when it reaches the temperature of a hundred or when the edges are just crinkled a trifle, remove and put in a cold place, this helps the cream to rise quickly. After thirty-six hours skim the cream off. Stir the cream into the jar of cream thoroughly. Before churning take the cream jar and stand it in a pail of hot water until the cream reaches eighty degrees, stir it so that it will be evenly heated adding hot water to the container when necessary. It will take about three hours to raise the cream to this temperature, keep it covered taste it and hold it warm until it develops a slightly acid taste and the smooth look of ripe cream then chill it as rapidly as possible. When at fifty-four it can be churned at once or it can be chilled down to as low as possible, and held for ten hours. It will then have to warm up to fifty-four. Churn slowly and the butter should come in twenty minutes. When the size of grains of wheat run off the buttermilk and add water, turn a few times slowly and then run off the water, add the salt and turn again to mix it in, take up, work it and make into rolls. If the butter is carefully handled it will be found unnecessary to work it twice, the secret is to wash it with water the same temperature as the butter and then to sprinkle in the salt carefully before taking it up.—M. E. S.

Facts For Stockmen.

No combination of figures or long line of cyphers, can give a just idea of the colossal proportions of the cattle industry as carried on by American farmers and ranchmen.

Statistics of a year or so back tell us that 17,000,000 cows and more than 43,000,000 other horned cattle, roamed the great ranges of the West, or fed in farm yard and stable in every State in the Union. All this stock reaches a total valuation of one thousand three hundred million dollars—figures too large to get hold of with any clear comprehension. Now, in view of the immensity of this great business, what would it become in the future if all needless waste were eliminated? For there is waste, enormous and useless. Cattlemen are just beginning to realize how much has been lost by lack of system and the happy-go-lucky methods of a past generation of great cattle kings, and how great a loss there still is today in every stable and on every farm. Success now depends upon economical methods—not on the thousands of head a man counts in his herds. Every pound of hay or grain is carefully reckoned with in these days, and the individual animal required to return the greatest possible growth or increase for the outlay. To further this desired result, knowing feeders give Dr. Hess Stock Food in small doses twice a day, because experience proves its great value as a digestive tonic and flesh builder. Common sense tells us that an animal in confinement is surrounded by unnatural conditions. When such conditions are made still more unnatural by the use of dry feed, nature must be assisted in her struggle for a proper balance and action of animal functions. Dr. Hess Stock Food maintains this balance and activity of the animal economy by so assisting and strengthening the digestive organs that the maximum amount of nutriment is assimilated and converted to growth, fattening, or secretion of milk. That Dr. Hess Stock Food actually accomplishes this desired end is abundantly proved by the unsought testimonials of thousands of successful feeders, and by the endorsement of the Agricultural Department at Washington. Furthermore, Professors Quitman, Winslow and Finley Dun—acknowledged authorities on such subjects—state that bitter tonics, iron for the blood, and nitrates to expel poisonous matter (all of which enter into the composition of Dr. Hess Stock Food) are essential in maintaining the highest degree of animal health and efficiency. With such abundant proof of actual value, farmers everywhere are turning to Dr. Hess Stock Food as the one thing necessary to put the feeding business on a paying basis. By its aid the margin of profit, sometimes so narrow as to come dangerously near actual loss, is increased till a year's operation shows a substantial balance on the right side of the ledger. Bear in mind, then, that nothing "tones up" a feeding animal, gives such good health and increased appetite, as Dr. Hess Stock Food.

A little twice a day in grain rations solves the feeder's most serious problem, and places his business in the front rank as an agricultural stand-by.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 558-557 So. Los Angeles St., Los Angeles.

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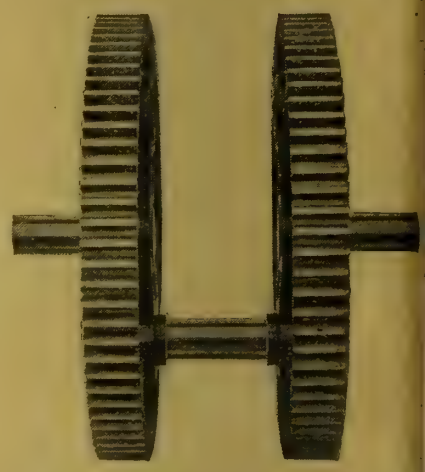
The Pomona Pump



The pumping season of 1906 is now drawing to a close, and the Pomona Manufacturing Company of Pomona have installed and have in successful operation some of the largest deep-well pumping plants in Southern California, among which are the following:

Santa Anita Land and Water Co.
40 Horsepower
Artesian Belt Water Co. of San Dimas
40 Horsepower
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40 Horsepower
Western Watern & Power Co., Glendora
50 Horsepower
Irvine Company of Santa Ana
30 Horsepower
E. J. Baldwin Ranch 40 Horsepower

And for next season they are preparing to turn out cylinders of larger diameter and power-heads up to 60-H.P. capacity.

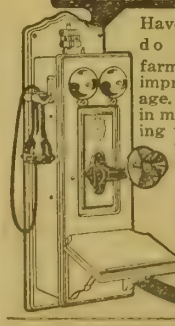
The new catalog for 1907 will be ready in a few weeks, and they will be sent free to any one interested in deep-well pumping.

Pomona Manufacturing Company
Manufacturers
Pomona, California

Cutter's
Anthrax and Blackleg
Vaccines

Are given the preference by 80% of California stockmen because they give better results than others do.
Write for prices, testimonials and our NEW booklet on Anthrax and Blackleg
The Cutter Laboratory
Berkeley, California

FARM TELEPHONES



Have had as much to do with making the farmers prosperous as any improved implement of the age. If you are interested in making money and saving time and worry, write us for booklet, "Over the Wire."
The **Williams Telephone & Supply Co**
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Of both sexes for sale at reduced rates for 30 days. Address, **W. R. McCaslin & Son, Walsh Station, Sacramento County, Cal.**

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Records and Supplies, delivered at your nearest railroad station upon receipt of full retail price.
Write for particulars and ask for catalogue.
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Walnuts, Grafted and Seedling
Raspberries, Strawberries
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STRAWBERRY PLANTS—
BRANDYWINE and A1
elect Plants at $2.00 per 1000. W. H. POTTER, R. F. D. No. 1, Box 108, Covina, Cal.

The Famous Klondike and Mammoth Strawberry Plants
For Sale. D. E. CAZAD, R. D. 2, ORANGE, CAL.

500,000 Brandywine Arizona and Klondyke **Strawberry Plants**
At bottom prices. All first-class and from the east last spring. G. W. Mullendore, Covina, Cal.

Early Cuthbert Raspberry Plants
I have Twenty-Five Thousand Early Cuthbert Raspberry Plants to sell at Six Dollars per Thousand.
L. D. Woodworth, Covina, Cal.

Trees Early Crawford, Hale's Early and many other varieties of Peach trees; all fine budded stock.
Large stock of all the leading varieties of Apples, grafted on whole roots and free from all pests. Also a fine stock of Cherries, Pears, Burbank and A.B.S.S. Walnuts, etc. Send for price list.
A. F. Scheidecker, Sebastopol, Cal.
Prop. Pleasant View Nursery.

Strawberry Plants 150,000 Brandywines 200,000 Klondyke and a few Arizonas
All First-Class Plants
Chas A. Grafton, Covina, Cal.

Strawberry Plants
800,000 Brandywines
400,000 A1
20,000 Pride of Michigan
All grown from Kellogg stock and guaranteed First-Class Plants. Write for prices.
F. P. BALDOSSER,
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Berry Plants

Gardena Dewberry -	$8.00
Brandywine - -	2.00
Aroma B - - -	3.00
Senator Dunlap - -	3.00
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(Improved) Lady Thompson	2.50

All plants fresh from the east last spring, and were raised on virgin soil. Write for prices on 100,000 lots.
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Strawberry PLANTS
Headquarters For The
Burbank Beauty
A real beauty and the earliest and most vigorous of all strawberries. A good table berry and will ship further than any other berry. $3.00 per thousand.
Brandywines—The old standard variety of the southwest. Can fill orders by the thousand, hundred thousand or million. $2.00 per thousand. Plants carefully packed and we guarantee their arrival in good condition.
FAIRVIEW FARM NURSERY
G. H. HOPKINS, Prop BURBANK, CAL.

Twenty Thousand First-Class
Walnut Trees
Two Thousand Grafts
No Disease. Long Roots and Every Tree Warranted
SANTA BARBARA SOFT SHELL
SANTA ROSA SOFT SHELL
PLACENTIA PERFECTION
FRANQUETTE, MESANGE
PRIZE, ETC., ETC.
Improved Gardena Dewberry, and all Other Kinds of Berry Plants. Ornamentals, Etc.
A. R. RIDEOUT
MAGNOLIA NURSERY WHITTIER, CAL.

Orchard Planting

Continued from Page 4

should plant dwarf or standard trees. Growing dwarf and standard trees take in two types of fruit-growing and the intending grower should study both types thoroughly and decide according to circumstances. It may be said, that as a general rule, the standard trees are more reliable and on the whole better. The dwarf trees do not seem to be so vigorous, requiring extra care and are not as profitable. For family orchards the dwarfs can be grown advantageously but for large commercial plantations the standards are better.

"Where can I buy fruit trees, and do trees from the north, east, south or west do best in this climate?" These are questions frequently asked by orchard planters in the Territory. The question of the source of trees is one that attracts considerable attention and bears some relation to the planters local conditions, which at present, can not be definitely answered for New Mexico. This question involves a numebr of things, such as the manner of growing the nursery stock, the distance shipped, the way they are packed when shipped, and the treatment of the tree when received. Apparently there seems to be no material difference in the growth of the tree on account of its source, if it has been well grown, well shipped and well taken care of when received and well started. As a general rule, however, if all these conditions be equal, the home-grown trees or those grown nearest you are the best.

FABIAN GARCIA.

New Mexico.

PLANT FOOD FOR FRUITS.

Recent experiments made by the New York Experiment Station show that peach trees are the heaviest users of plant food when peach, apple, pear, plum and quince are compared. Apple and quince are about alike while plum and pears are near together and come in the third group.

Each variety of tree takes about the same proportion of each kind of plant food, but vary in quantity of the whole. Taking nitrogen as a unit the comparison is about as follows. Nitrogen 1, Phosphoric acid .27; Potash, 1.14; Lime, 1.35; and Magnesia, 0.45.

The amount used per acre at the New York Station was determined to be about as follows. Apples, 35 trees per acre; nitrogen, 51.5 pounds., peach, 120 trees per acre, 74.5, pear, 120 trees 29.5; plum 29.5; quince, 240 trees per acre, 45.5 pounds per acre. Phosphoric acid:—Apple, 14.0 pounds per acre; peach, 18.0; pear, 7.0; plum 8.5 and quince, 15.5 pounds per acre.

Potash:—Apple, 55.0 pounds per acre, peach, 72.0; pear, 33.0; plum, 38.0; and quince, 57.0 pounds per acre.

Lime:—Apple, 57.0 pounds per acre, peach, 114.0; pear, 38.0; plum, 41.0 and quince, 65.5 pounds per acre.

Magnesia:—Apple, 23 pounds per acre, peach, 35; pear, 11; plum, 13 and quince 19 pounds per acre.

It was found that the fruit removed from an acre of land, the following amounts of material in the order named above; nitrogen etc., 16.5 pounds; 7 pounds; 32.8 pounds; 3 and 4.4 pounds respectively.

The leaves removed from an acre, 26 pounds, 4.6 pounds; 16, 49.6 and 14.3 pounds respectively.

The new yearly growth removed from an acre 3.2; 1; 2; 10.4 and 1.5 pounds respectively.

This will give some sort of an idea as to how these various fruits may be fertilized most economically. The leaves are largely returned to the soil and so are the elements contained in the prunings, except the nitrogen, if the ashes are returned to the orchard. Little need be taken into account except the fruit.

STRAWBERRY FERTILIZATION.

Now is the time to plan the years food for your plants and trees. In fact it is "feeding time" so far as the phosphoric acid and potash are concerned. The nitrogen can be given partly later in the season, after the spring growth starts. If we are thinking of looking toward the production of fruit, potash should be given a prominent place in the ration. Failure to get satisfactory results from the use of plant foods often arises from neglecting to give separate consideration to the plant and the fruit. While the fruit demands a liberal use of potash, we must first produce the plant, and in this preliminary work a smaller portion of potash, and relatively more nitrogen and phosphoric acid are required. For instance if the strawberry grower desires to get berries he must first make vigorous plants with abundant foliage. His second object is to make these plants bear a crop of fruit. Foliage makes great demand on nitrogen. Fruit requires liberal supplies of potash. The rational fertilizing of strawberry plantations is essentially the practical application and proper relation of these two facts. It should not be inferred that either of these two essential plant foods alone will produce satisfactory results on the portion of the crop to which it is especially adapted. Both are indispensible to the normal growth of each part of the plant, but each possesses special relations to the development of a single part of the strawberry plant, and the proportion of the two materials should be varied to meet the requirements of each of these parts at the time when the development of this part of the plant is the chief work of the plant.

The long seasons of growth before fruit production begins renders the division and proportioning of the fertilizer applications sa as to meet these separate requirements entirely feasible. This division of the total application of fertilizer has a further advantage. Nitrogen is not only the most costly ingredient of all fertilizers, but it is also the one most subject to loss in drainage waters. In sections where the ground is not thoroughly frozen during the winter, but is subjected to heavy washing rains during this season, all nitrogen in excess of the immediate requirements of the plant is exposed to the danger of serious waste before the excess can be used by the crop. Excessive early applications of nitrogen, moreover, are accompanied by a further disadvantage. Too much nitrogen in the fall or early spring, increases the danger of setbacks from freezing. Liberal amounts of potash, on the other hand, increase the hardiness of the plants, and diminish this danger.

Another property of these two plant foods is of special importance, as related to the character of the fruit produced. Excessive nitrogen tends to produce soft berries. Liberal potash fertilizing tends in the opposite direction, and increases the shipping quality of the fruit. With these controlling facts in mind, the proper and economical fertilizing of the strawberry crop is comparatively simple.—Geo. Wright.

Supervisor John W. Ballard of Carpinteria has the banner bean farm of the State. Not in acreage, but in the amount yielded per acre. Mr. Ballard has a forty-acre tract in Carpinteria and this year it yielded more than a ton and a half to the acre of common lima beans and it is said that the forty-acre tract returned about $4000 net to its owner.

The entire crop of fruit of this year shipped from Anderson consisted of fifty carloads green Bartlett pears for the East; fifty of the same for canneries. Thirty-eight hundred tons cured prunes, 130 tons dried Bartlett pears have been packed and shipped by the two dried fruit packing-houses of this place. This output to the growers realized them in return $400,000, Anderson being the shipping and distributing point for the bulk of the horticultural and agricultural products grown in the farming and stock-raising part of central and southern Shasta county.

Stepnen Strong, Chairman of the Los Angeles county Horticultural Commission, and one of the ablest ever occupying that position, has received a special appointment from the United States Department of Agriculture to proceed to Florida as a mission ary of fumigation to teach the native Floridan how best to control orchard pests. He left Los Angeles, Dec. 31st, 1906.

STEWART BROS. With a bigger and better stock than ever of
ORNAMENTAL AND FRUIT TREES
are located with their salesyard this year at ***732 S. Spring St.*** Los Angeles

WALNUT TREES grown from carefully selected seed
I have a fine lot of trees. Call and see them. Postal gets price list. **A. A. MILLS, Anaheim, Cal.**

42 Cents a Box ***for the New Early Raspberry***
You don't believe it? Ask the Commission Merchants at the Third Street Market. The gross returns have averaged $1000.00 per acre for the past two years. ***Plants For Sale.***
Hal Davenport - - Tropico, Cal.

A Wide-Awake and Up-To-Date Seed House
We are now publishing our 14th Annual Catalogue. It is artfully designed; the style is new and original. The Cover Pages portray the busy scene at the Los Angeles market during the early morning hours. Every vegetable is illustrated and is described in Spanish as well as in English. Send your name and address asking for the catalogue.
We are Southern California Agents for
The Glendale Incubator Co.
a hot water machine, constructed along lines that are a working demonstration of the true way to apply the fundamental theory of artificial hatching.
In one year it will pay for itself in the saving of time, trouble and expense.
Those using the GLENDALE INCUBATOR are its most enthusiastic friends, and they are not running the machine for fun but for profit.
Its chief points of superiority are, durability, ease and economy of operation.
Each day's delay means the loss of DOLLARS to you, so do right, and write as soon as you can get a postal card for our catalog, telling you why you can't afford to be without our INCUBATORS and BROODERS.
JOHNSON & MUSSER SEED CO. 113 NORTH MAIN ST., LOS ANGELES, CAL.

The Vegetable Garden

By ERNEST BRAUNTON

The Melon Aphis

THE melon aphis, or, as it is commonly known, the "melon louse," injures plants by piercing them with its beak and sapping their vitality. It occurs from early spring to late in autumn on melons and other cucurbits of all kinds, and on many other crop plants, and in seasons which favor its increase, notably in summers following springs that are cool and rainy, it frequently develops in enormous numbers and does very serious damage, collecting in masses on the under surface of the leaves of plants and causing them to curl, shrivel, and lose color, and interfering with the ultimate development of the fruit. Often it kills plants outright, and destroys whole fields or greatly reduces the yield of fruit.

The melon aphis, like others of its kind, excretes "honey dew," but this is not so copious as in the case of many species of aphides, for example, certain forms which affect trees. When, however, the aphis under discussion becomes unusually abundant, the honey dew covers the leaves of the affected plants with a thin, sticky coating on which the white cast skins of the aphides adhere, and this attracts attention to injury, as does also the wilting and dying down of the plants. Some persons notice this honey dew, and are aware of the presence of the insects. They speak of the injury as "honey dew,' 'and have even applied this name to the insect itself.

Quite too frequently, by the time the presence of the melon aphis in injurious numbers is noticed, irreparable damage has been accomplished and the insects have for the most part migrated to other pastures.

TRANSPLANTING ONIONS.

One of the principal things in view in raising onions is to produce a large yield; and in order to do this, all of the soil must be utilized to the best advantage. Most of the onion growers allow too much land to each onion. Ordinarily, the onions are planted about twelve inches in each direction and in this way the land is not made to produce all it can. The most common distance, where "hand culture" is practiced, seems to be from twelve to fifteen inches between the rows and from four to four and a half inches in the row. Setting the onions out at these distances gives a larger number to the acre, varying from 100,000 to 120,000 onions or more. On the other hand, if "horse culture" is employed, the distance between the rows is usually increased to at least thirty inches, thus reducing the number of onions to the acre.

FAILURE WITH MUSHROOMS.

Success in mushroom growing depends on intelligent study of conditions and on experience. While many American growers have been successful in the production of mushrooms, a much larger number have failed. In most cases their failures have been due to one or more of the following causes:

(1.) The use of poor spawn, or of spawn which has been killed by improper storage.

(2.) Spawning at a temperature injuriously high.

(3.) The use of too much water either at the time of spawning or later.

(4.) Unfavorable temperature during the growing period.

POTATO DRY ROT.

This disease is caused by a fungus, Fusarium oxysporium, which growing in the stem causes the plants to gradually dry up and die. The disease is indicated by the lighter colored and more or less rolled up leaves. When dug the potatoes may appear sound, but internally show black or brown streaks, and later are destroyed at least at one end by the dry rot.

The fungus may remain in the soil for a long time, and badly affected land may have to be abandoned for potato growing for several years. The affected tubers should not be used for seed.

Nervous Passenger (during thunderstorm)—Ain't it dangerous to be on a street car when it's lightning so?

Calm Passenger—Not at all. You see, the motorman is a nonconductor.

One time a pale student from Ga.
Was pinched for being a fa.
Said the judge with a smile:
"Young man, for a while
Free of charge we are going to ba."

HOW FROST IS FORMED.

The atmosphere of the earth always contains more or less moisture in an invisible form. When at a considerable elevation above the earth this moisture, or aqueous vapor, is condensed, clouds are formed; when the process of condensation is more active and the temperature of the air is above freezing, rain falls, and when the temperature of the air is below freezing, snow is produced. When the moisture of the air in immediate contact with the earth is condensed at temperatures above freezing, dew is formed; when at temperatures below freezing, frost is deposited. Frost is, therefore, the moisture of the air condensed at freezing temperatures upon plants and other objects near the surface of the earth.

PROPAGATION.

The propagation of plants is their reproduction by natural or artificial means. A knowledge of these means is of great importance to agriculturists of all classes, and especially to those engaged in the various branches of horticulture. There are, for instance, so many benefits to be gained by the local production of nursery stock that fruit growers of a developing region cannot afford to neglect this art. The introduction of dangerous pests can be avoided, scions and buds from trees thoroughly acclimated can be obtained, the young stock will not be forced to suffer the shock of long transportation and a change of climate, and last, and by no means least, the orchardist can have his trees grown from scions or buds from his favorite trees.

Woodman, spare not that tree;
Cut every single bough.
If ever we needed wood,
We certainly need it now.

Crimson Winter Rhubarb Seed

Fresh Crop. $4.00 per Pound by Mail
Excelsior Strawberry Plants, $2.00 per 1000.
Belvidere Nursery
Box 168 - - Redondo, Cal.

Crimson Winter Rhubarb

Original Burbank Strain

$1.50 per Doz., $6.00 per 100, $40 per 1000

Now is good time to plant. We are the **only** Rhubarb Specialists on the Coast. We devote most of our time to its cultivation and improvement. We have the **Best pedigreed** plants ever offered of this wonderful **money maker.** Write or call on

J. B. WAGNER, the Rhubarb Specialist, Pasadena, Cal.

A Fine Stock of Superlative Raspberry, also Fruit Trees and Vines of All Sorts. Both Phones.

P. S.—See Article in Cultivator on Page 550, issue of December 6th.

SOW WESTERN SEEDS IN WESTERN SOIL

Here's a SPECIAL OFFER to make New Friends for LILLY'S Northern Grown Seeds

LILLY'S BEST Vegetable seeds are grown on and adapted to this coast. These 10 varieties are the aristocrats of the kitchen-garden. They represent the acme of Lilly effort, the result of years of careful seed selection and cultivation. This Special Offer gives you $1.50 in these seeds for $1.00. Read the descriptions, all of which are carefully and conservatively made. Living up to the catalogue description is what has built up the reputation of Lilly's Best Seeds.

PUGET SOUND SPECIAL TOMATO.

This miniature, from a photograph, gives you an idea how the tomato produces. Is an early dwarf, stands free from the ground, with hard, firm, round stalks. Yields large clusters of round, firm, luscious fruit, beautiful rich color, free from blemish, stands shipment splendidly. A three-season leader; popular everywhere. Perfected by us on our experiment grounds at Brighton Beach, and can be obtained solely from us. Sold only in sealed packets. Ounce, 60c; packet, 10c.

GOLDEN JERSEY WAX BEAN.

Brittle, tender, broad, thick—the best of all the yellow pod bush beans. Stringless. Beautiful golden color and delicious flavor. Vigorous, reliable, and an abundant producer. ¼-lb., 25c; packet, 10c.

JACK FROST SWEET CORN.

Plump, milky kernels, that melt in your mouth; tender, sweet, prolific—really phenomenal. Dwarf variety, permitting close planting. Very hardy. Jack Frost seed has been perfected by ourselves on Puget Sound, is thoroughly acclimated and peculiarly adapted to Pacific Coast conditions. Not only season's earliest, but longest and latest producer. We cannot say too much in endorsement of this corn. Large packet, 15c.

LILLY'S GLORY CABBAGE.

Glorious in flavor, gloriously sound, a glorious grower and a glorious shipper. Lilly ships tons of this cabbage seed across the continent, as this variety, perfected on Puget Sound, is admitted to be the best cabbage grown. Even rounder and more solid than the Danish Ball Head, and infinitely better adapted to Pacific coast conditions. True to type, every head like its neighbor, symmetrical, white inside and solid to the core. ¼-lb., $1.25; 1-oz., 35c; packet, 10c.

PRIDE OF THE PACIFIC CUCUMBER.

Almost a seedless cucumber, the seeds being small and few. Perfectly smooth, very dark green, beautiful white flesh, perfect cucumber flavor, exceptionally firm, crisp and delicious. Grows 10 to 18 inches long, always straight, and dark green until ripe. Vine hardy and vigorous; enormously productive; yields early and late in season. ¼-lb., 65c; 2-oz., 40c; oz., 25c; packet, 10c.

ENGLISH FORCING LETTUCE.

Large, crisp, tender; best variety for home culture, because easily grown outdoors or in frames; rich color, ideal for garnishing. Hotels gladly pay one-third more for this lettuce. Stands more neglect in watering, and does not quickly run to seed. Most profitable for market purposes because quickly ready in fine large bunches of beautiful light green, which never spot. ¼-lb., 50c; oz., 20c; packet, 10c.

MT. RAINIER PEA.

Dark, rich green, well-filled pods, creamy and delicious; enormously productive. Propagated in Washington, and the best early pea ever offered to western growers. Especially valuable for market gardeners, commanding the highest prices through the season. Large packet, 10c.

CRIMSON GLOBE BEET.

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The Ornamental Garden

By ERNEST BRAUNTON

Eucalyptus Timber

WE are in receipt of the following letter from one of the largest vehicle manufactories in the United States, and, if any of our readers know where the desired timber may be obtained we should be very pleased to communicate the information to the firm in question.

"We are interested in the commercial value of eucalyptus wood and feel sure that you could help us insecuring the wood which we wish to test.

"These tests are to compare the value of eucalyptus with hickory in the manufacture of vehicle parts, and will open up a new market for eucalyptus here in the East if the outcome of these tests are favorable to the eucalyptus.

"We wish to test the following stock: 25 pieces of 1½x1½x28 inches and 10 pieces of 1½x1½ by 7 feet, from the following 20 trees; 4 trees each of:—Blue Gum (E. globulus,) Sugar Gum (E. corynocalyx,) Karri (E. diversicolor,) South Aust. Blue Gum (E. leucoxylon,) and Narrow-Leaved Iron Bark (E. crebra.)

"If possible we would like these trees to be of four different ages, the four ages being uniform for the five species. This would divide the stock into four parts as regards age. For instance, the cut from 4-year-old trees would consist of, 25—1½x1½x28 inches and 10—1½x1½ in. by 7 feet pieces of the five kinds of eucalyptus, making five 4-year-old trees.

"Each stick of the stock should be marked and the whole accompanied by a report showing the kind, size, and age of the tree from which the stock was cut. There should also be a statement of how much seasoning the stock had had before being shipped to us.

"We would be pleased to have you quote us the price on the above stock, bearing in mind that the stock is of no value to us unless the marking and history is guaranteed by the shipper.

"If you are not in a position to furnish the stock, kindly refer us to some party that you would recommend."

ROOTING CACTUS.

As there seems to be a great difference of opinion in regard to the proper soil in which to propagate and grow cacti and other succulents of like nature, a few words from a California cactus nurseryman might be of some assistance to some amateurs who are "halting between two (or more) opinions." I have experimented with all classes of cacti, in every different soil advocated by cactus growers in general, and find that pure white sand, neither too coarse nor to fine, is the best for all propagation and rooting.

It should be made damp, not wet, before planting your cuttings, and kept dry most of the time, not watering more than once a week at most, until cuttings are rooted. Some of the few exceptions to this rule are noted below.

Good drainage in all cases is essential to success.

Of all cacti, I have found pilocereus cuttings the hardest to root. I allow them to lie for two or three days with their butts to the sun in order to heal them, then dip into powdered charcoal, and plant in perfectly dry sand, and do not water until roots have started. When watering, a very weak solution of lime water will benefit Pilocereus, but does not benefit the majority of the other genera.

Most Echinocereus will stand but little water until well rooted. By following this treatment, I have found it easier in many cases to root cuttings, than to start new roots on plants. In rooting plants of these varieties, the same rules should be followed, after cutting off all old roots. Some varieties, as Echinocacti horizonthalonius, uncinatus and crispatus, with a few others, will strike latteral roots from the old ones, even after being out of the ground for three or four months, but it is best to cut off all roots from these as well as the others.

Flat-leaved opuntias as a rule will root very readily in almost any kind of soil, and in any degree of moisture. No rules can be laid down for any particular branch of the cactus family, as the genera approach each other so closely in some instances as to baffle, for a time, the best botanist. Each plant may need treating slightly different than any of the rest, and the closest study of each individual is necessary to success.

I do all my propagnating and rooting in lath houses, where they get partial sun all day.(E. B. 1894.)

BUY HOME-GROWN TREES.

A change in the surroundings of a tree always modifies its habit of growth. If the change is toward more favorable surroundings the result is seen in increased vigor, rate of growth, and size; if toward unfavorable surroundings, the reverse will be true. The stately Tulip-tree of the central Eastern States is said to be a mere shrub in Florida. The reason is that there it is out of its range of adaptation.

The White Elm, which grows with tall and vase-like form in New England, in the semiarid parts of Kansas and Oklahoma is low and spreading like an apple tree. Nor is form the only variable character. On the western elm the leaves are fewer in number, smaller, thicker, and much rougher than on the New England tree. In other parts of the tree there are differences of the same kind, though they are not so noticeable as those in the form and foliage. These variations have resulted from the differences in soil and climatic conditions to which the tree has been subjected.

The difference in form between two trees of the same kind in different localities has come through gradual divergence of characteristics. To a certain degree changes of this kind can be brought about in practice. When a gradual change is made in the surroundings of a tree a corresponding change takes place in the tree itself. Thus if stock of the New England elm be slowly moved westward through many generations, it will gradually change in form and other characteristics to be like the western tree; and it must be assumed that this change is necessary to enable it to live under its new conditions.

Sudden changes in the surroundings of a tree frequently cause its death, because it can not quickly change itself to meet the requirements of its new conditions. The New England elm moved at once to the semiarid West is likely to die, because it is not adapted to the conditions of soil, light, heat, and moisture of that region. In the prairie marshes of northern Indiana there are occasional knolls which once suported thrifty oaks of moisture-loving kinds. Now that the marshes have been drained the drying out of the soil has caused the oaks to die. The change was too sudden.

Suddenness and intensity of change often account for the failure of trees to thrive when moved away from the region to which they were adapted. This is also why Eastern trees so often die when moved to the West. This is why nursery stock grown near by can be more safely planted than that grown in a distant region. It is a practical matter, and should be generally understood, for it is of more importance to Californians than is the case in other States for our climatic and soil conditions are not duplicated elsewhere in the United States.

CONTROLLING JOHNSON GRASS.

Secretary Wilson in his annual report has the following to say about controlling Johnson grass:

It is believed that data have been secured which will enable the farmer to control Johnson grass and utilize it in a satisfactory way in crop rotation in the South. The secret of success in this work lies in the fact that in a Johnson grass sod left undisturbed for two or three years the rootstocks are found only at the surface. In this condition the pest is easily destroyed by shallow plowing and a little extra cultivation the next summer. This permits Johnson grass to be grown in a rotation, such as cotton, corn and cowpeas, winter oats and Johnson grass two years. Where the pest is allowed to grow on land that is cultivated in cotton or corn the rootstocks penetrate into the soil and eradication is extremely difficult.

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Thursday January 3 1907

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PRACTICAL SOLUTION.

They are solving the labor question in Texas with the Japanese in a sensible manner. During the month of November, 300 Japs entered Mexico as laborers in the mines, but they deserted and came into the United States in a body. Now Texas has assured them, if they will remain as laborers, of kind treatment and all the emoluments which our treaties with other nations provide. We may learn wisdom yet from Texas.

STATE FARMERS' INSTITUTES.

The University of California hold a session of Horticulture and Entomology at Los Angeles, January, 7-12.

In a bulletin of instructions the University authorities announce:

"These courses are designed to meet the needs of all persons who desire to make themselves more familiar with the principles underlying farming operations and with the most approved practice. We will endeavor to make them in every way thoroughly practical.

"The short course is open to all persons of good moral character who have had sufficient school training to enable them to intelligently understand lectures, take notes, and perform the necessary text-book work. The better the previous education of the student the greater will be the benefit to be derived from the instruction given."

The Cultivator would urge as large an attendance of students at these sessions as is possible to obtain. Farmers will do well to "lay off" and "take in" the lectures in these courses. Graduates from High Schools should be interested in the University short courses when they can obtain them so cheaply and conveniently.

PULLMAN CAR TAXATION.

In the report of the Commission on Revenue and Taxation of the State of California, the advance sheets of which have occupied the attention of the Cultivator, for the past two weeks, reference is made to the glaring injustice in the present method of taxing this Company. The only taxes levied are on those cars it operates in the State during the year, and these are only such as are found in the State on the first Monday in March. All other cars operated during the year escape taxation.

In 1905 the total assessed valuation of car companies of all sorts was $981,485, and the taxes paid amount to $18,831.17. Of this amount the Pullman Company paid $10,522.85.

Taking a close estimate of the gross earnings of the Pullman Company in California in 1905, it will be seen that on the average 62 Standard cars, 400 miles per day, 365 days, at 7 cents per mile, earn per annum $633,640. Thirty tourist cars, 300 miles per day, 365 days, at 5 cents per mile earn per annum $208,050.00 a total earning during the year of $481,690.00

These figures fall far below the earnings of 1906, computed by the same method, which were in the immediate neighborhood of $1,012,875.00. Now, when we take into account the earning capacity of this Company whose total net revenue in 1905 is put at $27,122,020, with dividends declared $5,919,984, we are amazed that its tax total is but $10,528.85 in a State like California.

It should have been, at 4 per cent. of the gross earnings, at least $40,000 per annum. Instead, it is less than three-fourths of that sum.

Why such absurd and almost criminal variance has been permitted to exist so long, is something the average tax payer cannot comprehend.

It does not seem to one who has studied the question of tax revision in California, that it should occupy the attention of our legislators for any considerable time, to work out a law which is more just and equitable than the present one.

Certain it is that the Pullman Car Company is away below what it ought to be in the tax ratio. It should be raised in proportion to other values; for it has so far escaped with a mere bagatelle of what it ought to have paid in taxes annually to the State.

TAX REVISION.

The showing made by Gov. Pardee in his address before the Hanford Fruit Grower's Convention on taxation revision, is worthy of the most thoughtful consideration of every citizen of California. He shows by comparison of figures that the manufacturers pay half of 1 per cent. on their capital in taxes; while the farmer pays 1.14 per cent; two and a third times as much. Taken another form he demonstrates that manufacturers pay one third of 1 per cent. of their gross income in taxes, while the former pays 7 per cent., or 20 times as much.

If the same investigation be pursued relative to corporations, banks and railroads, it will be seen that the former pay .65 per cent. on their capital and the latter .30 per cent., while the farmer pays 10 per cent. on his invested capital.

It is so all along the line. Land, whether in the form of town lots, or in broad acres, bears a disportionate tax ratio to other property, and it is this inequality which the tax commission is seeking to correct. When we remember that the farmer pays a tax of 10 per cent. on his farm, while the manufacturer pays but 2 per cent., we do not wonder that our agricultural industries are lagging and our resources remain undeveloped. Persons engaged in agriculture with an average income of $500 pay $50 per capita per annum in taxes, while the manufacturers with an annual income of $870 pay $17.50 per capita per annum. The same inequality runs through personal property while monies and credits escape taxation almost entirely.

The same inequality exists on railroads, street railroads; express companies; light, heat, telephone and telegraph companies. These unjust conditions are telling on our agricultural growth, which is the basis of our State development. The remedy for this state of things lies in the adoption of the proposed commission bill, or some other bill, which does away with favoritism and puts all property of whatever kind or character on a fair and impartial basis.

CROSS-EYED VISION.

In writing of his observations enroute from Topeka, Kans., to Long Beach, Cal., Horace B. Cowgill, son of the editor of the Kansas Farmer says.

"The desert vegetation was interesting as far it went. Kansas was the most fertile of all the country on the trip till we reached the irrigated fields of California, and except for irrigation, Southern California would be the worst desert of all, I think."

Young Mr. Cowgill must have seen little of California, for with the vision he got of the State, in the narrow section he passed through, he could get no definite idea of the magnitude of California's possibilities. Coming over the Santa Fe, Kansas is the only agricultural state through which the traveler passes, but one acre of California land, well tended and properly irrigated, will produce more wealth than 100 acres of Kansas domain—and Kansas is a marvelously rich commonwealth.

ARE WOMEN TO ECLIPSE MEN?

Scientists are saying the time is near at hand when women are to supersede men in almost all the business affairs of life. They assert that by actual investigation it is is shown that women are growing stronger in body, much more rapidly than men, that their brain is developing along lines heretofore quite dormant; that they are taking up masculine work with an adeptness and success, which foreshadows their ultimate triumph in the field of competition with their now stronger fellows.

Recent attention has been directed to several achievements of women in agricultural life where amid the most strenuous endeavors, they have won out, while under practically the same conditions men have failed. Two women in Dakota, three stockwomen in Colorado, half a dozen in Nebraska are cited to show that by taking the place of men and doing mens' work they have achieved splendid success, become wealthy and absolutely physically superior to their male neighbors.

The solution to the problem is given in the fact that the moral character of woman is higher than that of man. She does not dissipate as does the man while her energies are all directed to the success of the enterprise she has in hand. The tendency of nature is toward strength always, but where it is thwarted by the evil propensities of mind and body it loses, rather than gains. The tendency in the male sex is toward a lower strata. The youth whose mental and physical strength is dwarfed from the use of the debilitating and debasing cigarette stands no possible chance in competition with the clean, bright healthy girl whose mind and body is free from such vile influences. If there is one habit more pernicious than another, to which the youth of the present day is addicted, it is the use of the cigarette. It is destroying more youth than whiskey is men.

It is no wonder women are out-stripping men in the race of life. Why should they not? They are purer in mind and body and following the irrevocable law of nature, must become mentally and physically stronger. For centuries woman has been the superior of man in morality, in charity, in loyalty of friendship, in usefulness. And now science comes to prove her growing physical and mental superiority.

News of Country Life in the Golden West

Southern California

HORTICULTURE.

The Placentia Orange Growers' Association is packing a carload of oranges to ship to London.

The Benchley Fruit Company of Fullerton will ship three carloads of oranges and a large quantity of tomatoes East this week.

Ripe figs were on sale at Indio, Sunday. Where is there another place in California that figs are being gathered and marketed at this season of the year.

W. B. Thompson of Chino, will plant his young walnut orchard—between the rows—to onions. As the orchard is a 160 acre one this onion field will be large.

The Yuma County Fruit & Cantaloupe Growers Association has been organized with 21 members at Yuma. Cantaloupes will be planted next February to the extent of 300 acres.

Allan Knapp, on his ranch at Katella, has just shipped a carload of lima beans East, the net returns from which were $2100. He operate one of the most productive ranches in Orange county.

The Benchley Fruit Company shipper five carloads of oranges that past week to the eastern market. One car, besides being loaded with the regular boxes, carried 10 baskets on top of the boxes.

Twenty-two carloads of oranges were shipped from Orange depot of the Santa Fe during the week ending last evening. The shipment of green peas average 75 sacks daily and of tomatoes 50 crates daily.

The new crop of lemons around Escondido is coming on rapidly and several teams are hauling immense loads to the packing-houses. The price is good, considering this is the season of lowest consumption.

The Corona Packing Company has pickers out this week on the property of the Boston and South Riverside Company's lands. They comprise about two hundred and fifty acres, and the fruit will be shipped out soon.

The Covina Orange Growers Association started packing on Thursday, Dec. 20., and will continue throughout the season. They will move five cars this week. The Covina High Land Citrus Union started picking on the 19th, and are now packing.

Fallbrook has produced some fine olives this year. A good many have been shipped, mostly to Gifford in San Diego, the price realized being about $60 per ton. They will be made into pickles. The smaller ones will be shipped later for oil and will bring about $40 a ton.

The Orange county walnut crop is practically all marketed, and from the best figures obtainable the product will reach between 4,500,000 and 5,000,000 pounds. Full half a million dollars has been put out to ranchers as a result of the crop harvest. This year the county went below its last year's mark.

The orange situation in the Redlands district has remained about the same for the early part of the season, so far as prices are concerned. The sales f. o. b. have been all about at the prices fixed by the shippers at the meeting held for the opening shipments, extra fancy being held at $2.25, with occasional sales for a better figure, and extra choice selling for $2.

California citrus fruit growers and shippers are being lined up with a view to making an organized effort to prevent the passage of a measure now before Congress known as the Sparkman bill. This bill, which was introduced by Representative Sparkman of Florida at the last session, seeks to regulate the size and style of orange box used by shippers all over the country. It is claimed in the interest of the shippers that last year the price of boxes was raised from 12½ to 21 cents, and this bill, if enacted into law, would compel them to use a certain make of box, thus allowing a further increase in price.

AGRICULTURE.

The shipment of celery from Smeltzer for the week ending December 22, was 114 cars. During the season 720 cars have been shipped. Owing to the car famine, the Celery Association has had to cancel many orders.

The loading of cars with celery still continues at Poloreno station, near old Newport. Twenty cars have been loaded so far, and the manager of the new packing-house, Mr. Sherrod, says that he exepcts to fill at least 150 cars.

The rain record for three days at San Jacinto last week was phenomenal, the fall having amounted to 3.24 inches—a figure never reached before within the same period of time. Ranchers who have not already their seeding done, are setting about plowing with a certainty of a big harvest. Pioneers say this and last season will prove to be like the wet seasons twelve years ago.

Mr. Charles Heil, who has lately been spending a good deal of time at his ranch in the Orange County peatlands, says that there have been about 700 cars of celery already shipped this season. While this is the normal amount usually sent off at this time of year, there could just as well have been 1000 car loads shipped by now as 700, had there been adequate means of transportation.

The planting of new citrus orchards promises to meet with a severe setback unless nursery stocks from Florida will be permitted to enter the State freely. The immense orchard projects in Tulare county are partly responsible for the serious shortage, and unless some source of supply is speedily located, the new orchards projected for Southern California must be put off for some time to come.

Redlands orange shipments have been heavier the past week than before, the total being eighty-nine cars of 362 boxes each, which is a greater number than last year by about two cars. The total for the season to date amounts to 211 cars, while the total to this date last year shipped from Redlands amounted to three times that number. The shortage of cars is in a great measure responsible for the few cars shipped. There seems to be little show for improvement in the line of extra cars, as the shortage is felt more and more all over the orange section as the season progresses.

Northern California

HORTICULTURE.

Christine is one of the best apple sections of the State and the crop was exceptionally good this year.

Two carloads of apple were shipped from Watsonville last night, bringing the total shipments for the season to date up to 1778 carloads.

An event of special interest to the vineyardists of San Joaquin county will be an institute to be conducted at Lodi Saturday, January 26th, by Professor F. T. Bioletti of the State University.

Cars of dried fruits have been shipped from Red Bluff every week from the opening of the season and Saturday three carloads were sent out to Eastern jobbers. Most of the output is already sold and the balance now on hand will be shipped soon after the first of the new year.

The peach output this year from Tehama has been about equal to that of last season, but apricots, always a variable crop, were quite light. Next year there should be an appreciable increase to this staple product. The fruit is packed exclusively in 25 and 50-pound boxes, nearly all with fancy paper tops or lace facings.

During the past six days up to yesterday morning, eighty-seven cars of oranges were shipped to market from the Lindsay district, making a total for the year up to date, 679 cars, an increase over 1905 of seventy-four cars. It is estimated that there will be about sixty cars more shipped from this point before the first of the year and several cars in January.

Geo. W. Sill of Watsonville has finished shipping apples for the season and has made a splendid record in view of the fact that this was considered an "off season." He forwarded 205 carloads of apples and the bulk of this stock was consigned to European points. The apples sent across the Atlantic met with high favor among buyers.

Ten cars of dried and canned fruits have been shipped from Winters last week, the Winters Canning and Winters Dried Fruit Company shipping the most of it. The Ernst Luehning Company is shipping figs and the J. K. Armsby Company is packing and shipping peaches and prunes. Shipments are going forward rapidly now, although it will probably be the first of February before everything is cleaned up.

AGRICULTURE.

During the last storm the rainfall in Suisun was 3 4-10 inches, making the precipitation for the season 5.61 inches.

The work of digging beets and delivering them to the Salinas sugar factory has been resumed. Over 40,000 tons of beets yet remain in the fields, and growers will be a very busy set of men until all are dug and delivered.

A number of farmers in Pajaro valley have not as yet sold their potatoes this season and most of them are holding out for still higher prices. This week there have been several buyers there but they have not been able to do much business owing to the fact that they and the man who has spuds can not agree on prices.

One buyer informed us that undoubtedly the choicest stock of potatoes in the State were those on hand in the Pajaro valley at present, and that they were far superior to the Oregon article that was being shipped into California at present. The buyers are offering as high as $1.65 per hundred.

The watermelon acreage in the Dinuba section promises to be larger than ever this year and every grower will do his utmost to get the first melons on the market, 640 acres in one piece has been rented and several smaller ones are being put in condition for melon growing. None of this land has been used for this purpose before.

The present favorable condition of the weather is very pleasing to the farmers in the Salinas valley and within a few days plowing will commence unless another heavy rain should come. From every indication the coming season will be one of the most prosperous ever known in the annals of Monterey and surrounding counties.

LIVE STOCK.

Pleyto has had about five and a half inches of rain, the country looks good and green, and stockmen are jubilant.

The farmers of Quincy and vicinity are very busy now putting in their crops and will be for some time, and stockmen are rejoicing over the good feed for their stock, the stock can get all the green feed they want and are doing fine. It is very likely they will have some early beef.

There has been sold and shipped from Anderson about $400,000 worth of cattle and hogs and farm products, exclusive of cereals, the consumption of these being greater than the production. The horticultural and agricultural industries are closely balanced in their productiveness, and combined total the tidy sum of $800,000.

It is said upon authority that a movement is on foot to reclaim nearly 30,000 acres of swamp and overflow land lying to the north of Sacramento, between the east bank of the river and the old Haggin ranch, stretching from the junction of the Sacramento and American rivers to the northern boundary of the county. This would materially add to the stock raising capacity of the county, if none should be tilled.

Reports from the Upper Tule district says they are having fine December weather with very little frost. The rain for the last week has been an inch, and feed is growing very fast for this time of year. Stock look well and cattlemen are jubilant over the prospects. The ground is well soaked, in fact ye correspondent has been here twenty years and never saw the amount of rain that we have had so far, start the water running in the gulches as it is now.

At a meeting of the Porterville Citrus Fair executive committee. J. H. Williams, A. G. Schulz and V. D. Knupp were appointed a committee to meet with committees from Lindsay and Exeter, to decide at which town to hold the second annual Tulare County Citrus Fair.

Moneta Farmers Institute

Editor Cultivator.—It might be of interest to the readers of the Cultivator to know that an unusually interesting farmers institute was recently held in Moneta, conducted by Mr. J. B. Neff.

While the attendance was not as large as it should have been, the interest manifested on the part of those who did attend was worthy of note, and indicates that at least a few people in this favored section are bent on doing the best thing possible to make their little ranches pay; this interest was due to a large extent to the Gardena & Moneta Farmers Club, a wide-awake, up-to-date club that meets once a month all through the year.

In this connection it may not be out of place to say that two of the papers read before the institute were read by members of the club, who, but for that fact would not have been heard from.

One of the papers treated of the practical side of berry-culture, giving in detail the cost of production of both bush and strawberries and giving in figures, the net profit obtained during the past year, and the comparative value of the different kinds of berries.

This paper was read by Mr. O. S. Gorham of Gardena, a practical berry man and was of unusual interest to those who are thinking of embarking in the business of berry-raising for market.

The other local paper was read by Prof. R. J. Rogers, principal of the Moneta scools. Mr. Rogers took for his topic, "The necessity of teaching Agriculture in the Public Schools."

The professor certainly did credit both to himself and the subject, inboth to himself and the subject indeed an address so valuable should be given greater publicity.

It goes without saying that Mr. Ward of Compton on apples, Dr. Twombly on Commercial fertilizers and the relative value of foods etc., and Mr. Ernest Braunton on landscape gardening were of paramount value to the people. Mr. Braunton could scarcely get away from the people. (his was the last paper on the program) so intensely interested were they.

The writer is a believer in the doctrine that credit should be given where credit is due, certainly much credit is due Mr. Neff for the earnest and able manner in which he conducted the institute, he has the happy faculty of bringing out the best thoughts of those who are in attendance and of maintaining an unflagging interest in the business of the institute from the opening to the closing. Surely people living in the territory assigned to Mr. Neff are to be congratulated on having so genial and thoroughly capable a man as institute director.

Yours truly,
C. W. STEPHENSON.

Gardena, Dec, 26, 1906.—

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Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

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St. Louis, Mo., Dec. 8th, 1904.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland:

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

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Granulated Milk Is made of pure skim milk, dried and ground to about the size of cracked grain. It contains 50% protein and 15% pure albumen. **$3.50 per 100 lbs.**

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During 1905 and 1906 I have exhibited at Haywards, Sacramento, Alameda, San Francisco, San Jose and Phoenix, Arizona; and my birds have taken many prizes, including many of the Special Prizes. I am able to furnish the best birds and eggs at moderate prices. Eggs for hatching from choice matings $5.00 per setting of 15 eggs. I cannot furnish large lots for incubators. Write for circular.

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White and Buff Wyandottes
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Sing e Comb White Leghorns Exclusively
Eggs for Hatching, $1.00 per 13, $5.00 per 100. High Fertility Guaranteed. Phone Park 682.
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Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

Orpingtons

A FEW WORDS ABOUT THE Orpingtons may interest our readers, as a great many will be exhibited at the coming shows this winter.

The Orpingtons are English fowls and the English are proud of them. A comparatively new comer in the poultry world, it has by sheer merit won its way not only to the first rank, but to the position of the premier popular breed of Great Britian.

The five varieties of Orpingtons were all originated by Mr. William Cook of Kent, England. There are now three popular varieties of Orpingtons in England, the Blacks, Buffs and Whites and two new and less known, the Jubilee and Spangled.

Orpingtons have been popular in England ever since 1886, when the blacks were brought out and the Buffs in 1894, when they were first exhibited. The Blacks were made by crosses of Black Langshan, Black Minorcas and Golden Hamburg. The Buffs of Buff Cochin, Silver Dorking and Golden Hamburg. The Hamburg has given them their great laying qualities, and having been planned for utility purposes alone, they meet all the requirements of the "dual purpose" fowl.

The Buffs have been admitted to the American Standard and the Blacks are asking for admission. In England the Whites are not as popular as the Buffs and Blacks, partly because the majority of the fanciers are men (business and workingmen) who live in town and have only backyards in town lots, and we all know how difficult it is to keep white fowls looking clean on bare earth runs, hence the colored fowls are more popular in England than the White.

It does one good to see a true fancier, one who enthuses over his fowls and I do not know when I have had a greater treat than the day I visited W. A. Stewart's yards in Los Angeles. He has first prize winners from the chief shows in England, the Crystal Palace, the Alexandra Palace (Dairy) the Royal Lancashire, the Lancaster and others. It goes without saying that with such birds he can capture any prize he wants here. His Buffs show an even shade of rich, golden buff throughout, with under color a lighter shade of buff to the skin, the very quills of the feathers are buff to the skin.

Fanciers in the glorious Golden West have sung the praises of that truly wonderful and justly popular fowl, the "Buff Orpington" until they are as well known here as in their own home, "The Tight Little Island Merrie England."

Now I would like to say a few words about the "Black Orpington" to my mind the most beautiful, the grandest, and the king of all the Orpington varieties. The black Orpington was originated by the late William Cook of Orpington, England. They were the first variety and were first exhibited in 1886. They were built out of crosses between the Black Langshan, Black Minorca and Golden Hamburg, which gives them their great size and wonderful laying qualities. It is strange that they have been so long overlooked here, for they certainly are a magnificient fowl, and both for utility and now a growing demand among fanciers and lovers of beautiful poultry (especially among the rich who want something superb and out of the common) for the majestic Blacks.

In the last two years there has been a radical change in the type of this grand bird. A famous cock in England which was sold for $750, has never been beaten up to two years ago, would not have now chance of winning under a competent judge. Up to that time the type was a round, cobby-shaped fowl, but today a much larger, massive, square built bird, set on short stout legs with a tremendeous deep body from back to keel is wanted. This change in shape is a great advance, as it gives a much larger amount of breast meat which is most desirable for a table fowl. Size is of the greatest importance in Black Orpingtons, cockerels should weigh 10 pounds and cocks 11 to 13 pounds. The back must be short and very broad, with a graceful concave sweep to the tail of medium height, with a profuse amount of graceful curving sickles. The eye must be dark as possible. The flesh pure white of very fine texture so much sought by modern epicures. The chicks are very hardy, easily raised, mature early and appeal strongly to the small fancier as they are bred true to type and color, and the per cent. of culls from good stock is the smallest of any breed.

The plumage is abundant; the neck saddle and hackle in the male being very profuse. The hens having a great abundance of rich, glossy greenish black plumage. Color is of supreme importance and goes far to show the quality of the breeding. Pure black with a rich bottle green sheen is absolutely essential. Any dull brown, dull black with no sheen, or any signs of purple should be avoided, as these are very serious faults and good specimens cannot be bred from fowls that have them.

As layers, and particularly winter layers, they have no superiors and very few equals.

I have no doubt that in the near future there will be a perfect craze for this beautiful and useful fowl. One could not look on a more beautiful sight than a flock of real-up-to-date Black Orpingtons, with their rich, glossy plumage flashing in California's glorious sunlight. To those who are on the look-out for making a big strike in the poultry business, I say "go in for some real, good up-to-date- Black Orpingtons and reap a rich reward."

(This article on Orpingtons has been prepared to furnish information about the bird of which so much is said of late.—Editor.)

PREPARING BIRDS FOR SHOW.

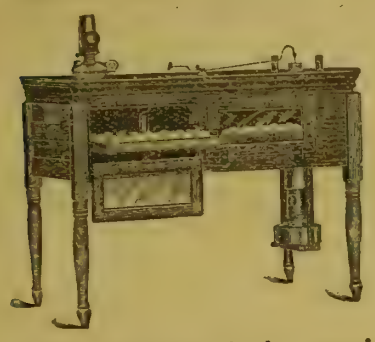
The individual who has given the minutest care to his exhibition stock from the time they were hatched until the present must be accredited with keen foresight. The training and special care of the birds must not be neglected until the time for the show is near at hand. It should begin when the chicks are hatched—and going still further back, we might say that it should have begun for the several preceding generations. We state this with the understanding that we are diligently trying to avoid saying anything that is in the least discouraging to you, reader; if you know that you have neglected this in a measure, do not let pass this season's opportunities; put your best efforts forth with the stock now available and determine to be in a better position another year.

The amateur will not find it the easiest task in the business to make proper selection of the stock which he must depend upon to win him honors. He should prepare himself by studying assiduously the requirements of the American Standard of Perfection, the authorized guide for judges in awarding premiums. All information that he can gain in one way and another he should turn to some value. It is plainly evident that birds for exhibition have to undergo considerable physical strain therefore all specimens should have vigor of constitution; they should all be in perfect health. If your birds belong to a class in which weight is one of the first considerations, take those birds of large size which promise to come up to the standard weight when properly conditioned. Do not select a small, undersized specimen and endeavor to bring it up to weight by putting on excessive fat; the results will in more than one respect be unsatisfactory. There is no detail which in selecting show specimens can be overlooked; defects sometimes almost indiscernible will throw a bird out of the competition. All these things must be watched against. If you do not consider yourself capable of passing judgment on the fowls, obtain the services of some one who knows them well.

Mrs. Potts: "They say that poets have to be born."

Potts: "That's what they say, but I never could understand why.

The "Chatham" Incubators and Brooders



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I want every reader to send for my free catalogue, telling all about this machine, and why "Women Succeed," "Profits in Poultry," "Broiler Raising," "Ducks for Market," "Which Hens to Keep," "About Turkeys," "To the Farmers," — a book of good useful information, and practical. Send a postal card with your name and address and this book will be mailed you free.

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SHADE'S Select Yards of Ten Hens with egg record of 234½, $3.00 per 13. All other yards at $1.50 per 15. All yards above 184. Incubator lots $8.00 per hundred. A neat little folder sent on request.
The Little Gem Automatic Feeder, $1.25.
SHADE'S RHODE ISLAND RED FARM
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WHITE ROCKS
Fine large vigorous farm-raised stock. Bred for utility and fancy points. Eggs, 15 for $1.50, $6.00 per 100. Call and see our stock and you will leave your order, for that is the way that all lovers of Fine White Rocks do that come to the White Plymouth Rock Ranch, J.T.Davis, Prop., Pomona, Cal.

Blue Andalusians
Eggs from Cosh, Morse and Griffith prize winning, producing strains, $2.50 per setting. Incubator lots, $7.50 and $10.00 per 100.
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The Best Flock of White, Partridge and Buff
Wyandottes
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Breeders and Importers of
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Have for sale Trios, Cockerels and Pullets. Eggs for hatching, settings or hundreds. Write or call,
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Eggs, $1.50 per setting, $6.00 per 100.
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Yards at Ranch (10) Phone Main 1583
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Eggs from Standard-bred Pens $1.50 and $2.00 per setting. Set early for early layers. Address
F. W. Lewis, 484 R.F.D., Long Beach, Cal.

WHERE POULTRY COMES FROM.

It is not generally known that four-fifths of all the poultry of the United States comes not from the large poultry plant, but from the farm. Last year the United States marketed 20,000,000,000 eggs, and Secretary Wilson has recently added a department to the animal industry division with the idea in mind of swelling this another billion. The hen does not require a scientifically compounded ration, and all the food she consumes may be raised on the farm. As a general proposition, strict accounts are not kept with a flock of hens, otherwise they would be found to be as profitable, if not more so than any other industry found on the farm. The cause of pure-breds as against the scrubs scarcely needs treating, because more and more farmers are finding out that there is more profit in a well-bred fowl than in a scrub. More mistakes, however, are made in the feeding and care of poultry than in the kind kept. Hens need a variety of grain and they should be made to do a good deal of scratching for their living. In the winter they need green food, and nothing is better for them than clover hay, roots and cabbage. They also need animal food in some form if they are expected to lay well. A load of gravel will generally supply grit enough for the average flock in the winter, and fifty cents worth of time would prepare enough charcoal which may be burned from cobs. Overcrowding is a very common cause of loss in poultry, or at least it contributes to lessening the profits. Small flocks that are kept up to the highest state of productiveness should have about ten square feet of floor space per hen, and the Maine station found that twenty-five hens kept in a house built with room enough for them would lay more eggs than when fifty hens were put in this same house. As a general thing, too many farmers fall down in being poor salesman. If they will endeavor to find a market for their fresh egs in towns and cities they can always do it, and receive a premium at all times.

The hen house should be repaired before the storms of winter come on. If it has cracks cover them. Avoid roup by keeping the fowls well protected from the storms of winter.

If you want eggs in winter, see to it that your fowls are properly fed and watered, and that they are comfortably protected with scratching room, also with good dust bath, and on stormy days, do not allow them to go out. But give them comfort within. —Ex.

It is well known, though less well known than it should be, that chicks thrive wonderfully on plowed ground, and one well known poultryman plows up alternate strips of his chick range so that the young stock can have their choice of either fresh ground or grass ground. He insists that the youngsters spend most of their time on the plowed ground.—Ex.

A supply of pepper pods won't be a bad thing for winter. Boil them in wheat, oats, mash, etc., and feed now and then. Salted bacon is a treat to confined hens in winter—a little now and then, though expensive, will pay in egg results, and healthy fowl. Feed meats now and then. Salty bacon is said to be fine, tending to check the feather plucking.—Ex.

The Petaluma Incubator Company, of Petaluma, Calif., have just shipped two carloads of Petaluma Incubators and Brooders to Indianapolis, Indiana. This is the commencement of several such shipments that will leave here for the eastern field, as the trade is just opening up and the "Hoosiers," "Hawkeyes,", "Prarie Staters," Missourians," etc., will be liberal users of this Petaluma product before the season closes.

Chimmie—G'wan, you're no ball player. Yer couldn't ketch a foul if it was moultin'!

Patsy—Gittout, you couldn't ketch a fly if it was stuck on sticky fly paper till it was dead as merlasses!

"There's no doubt about it," said he, oracularly, "a man is known by the company he keeps."

"Nonsense?" replied the wise girl, "If the average man were really known by his company she'd shake him right away."

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Have you tried ? Coulson's No. 3 Condition Powders

Your hens are just getting through their moult. Some of them look all right, and others are not in good condition, but they all seem to need something to tonic them up, and make them start laying again.

That is where **Coulson's No. 3 Condition Powders** come in. With the price of eggs gelting high, you can not afford to be without it. It will get them into a healthy, vigorous condition, start them laying again, and make a big profit for you when eggs are high.

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Price At Factory—5 lbs., 75c; 10 lbs., $1.35; 25 lbs., $3.00; 50 lbs., $5.50; 100 lbs., $10.50.

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White Wyandotte Farm
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Devoted to breeding White Wyandottes that will both **lay and win.**
Your choice of three thousand young stock raised from Eastern Winners.
Satisfaction guaranteed. Correspondence a pleasure.
Send 2c stamp for Illustrated Catalogue J.

Black Minorcas Exclusively
Albers' Black Minorcas excel in size and egg production and for four years have been practically masters of the California shows. Eggs for sale. Send for circular.
Perham & Wheeler, R. F. D. No. 123, Lordsburg, Cal.
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Beef Scraps

GUARANTEED ANALYSIS :
Protein 65%
Fat 8%

Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

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Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

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WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

Spargur's Trap-Nested White Leghorns
Eggs from 200-Egg Hens, $1.50 per 15, $6.00 per 100
From Second Best Pens, $1.00 per 15, $5.00 per 100
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30 DAYS TRIAL
Buy From Our Factory—Save One-Third
PRACTICAL INCUBATORS positively the best. Hatch more and stronger chicks. 10 YEARS' GUARANTEE
Cat. free. PRACTICAL INC. CO., 720 S. 11th St., San Jose, Cal.

ENVELOPES
SEND $2 for 1000 printed corner-card business envelopes. Quick delivery. $1.25 for 1000 business cards.
W. P. REYNOLDS & CO.,
Envelopes, Paper Boxes, Shipping Tags,
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Chicks Hatched
From Brown Eggs, 4c
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Minimum Charge, $2.50 per Hundred Eggs. No direct charge for infertiles.
Bihn-Schofield Method
51,000 Hatched Last Year, Shipped to Five States
Combined Egg Capacity, 45,000
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PREPARING SHOW BIRDS.

Preparing Coops.

Suitable coops should be in readiness for the stock selected, each bird being given a separate one. By all means do not crowd your birds into small coops. Have them of a reasonably large size—six to eight feet floor space and high enough that the fowls can not strike their heads and combs against the top. Have everything arranged as conveniently as possible. Place the coop in a poultry building, a well lighted, open-front scratching shed preferred, along the side of a wall. Arrange so that a light may be had in the house at night, as you will probably need to do some of the work in the evening. Into the coops put a quantity of straw, cut into short lengths perferably, excepting for feather legged birds, in which case the bottom of coop should be covered with sand. The coops should be cleaned twice a week and after the stock is washed, which is several days before the show, they should be cleaned daily.

To properly condition the birds they should be placed in these coops about two weeks before the show. This will give them plenty of time to become accustomed to their new surroundings and all the work necessary can be done in that time. When around your birds, make no undue noises that might frighten them. If they are naturally wild, they must be worked with to overcome this. When feeding them, approach as closely as possible and stroke them gently. You will gradually gain their confidence and they will become perfectly tame.

Training is quite important in preparing the birds. Typical carriage or symmetry is one of the chief requirements of fine birds, and training will induce them to assume a position which will show the specimens off to best advantage. It takes time and patience to train the fowls properly, but the results fully justify it. After some of the fear has gradually worn away from the bird, remove the coop and place on a stand. By gently stroking the bird under the throat it can readily be made to assume something near the desired carriage. There are many means by which the birds may be taught to stand correctly, and the ingenious fancier will make good use of those which may be suggested to him.

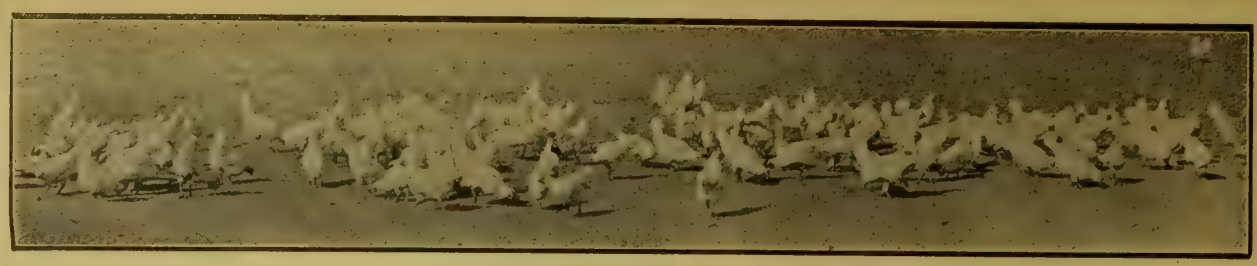
It takes an infinitely greater amount of work to properly fit white birds for the exhibition than it does the partially colored ones. In addition to all the other work, they will need to be given thorough washings to make them "as white as the driven snow." This is always an aggravating and patience-trying task, and right here frequently starts the fancier's discouragement.

Now Need Attention.

From the time the birds are washed until they are in the show room you should give them your closest attention. In every way try and prevent them from soiling their plumage. Do not feed a mash at this time—give them hard grains. When sending them to the exhibition be sure and start them so that they will arrive at their destination in time. Have the sides of the shipping coops inclosed and the top slatted. Watch your charges from the time they are started on their journey until they are safely home again. At our large exhibitions with so many fowls entered, there are very likely to be confusions, and it is best to take unusual precaution with their identification. On the shipping coop have a card bearing your name and address, the number of fowls sent in coop, leg number of each, etc. See that your entries are properly made.

The size of exhibit you make will be governed by the number of extra fine specimens you have the time you can give to their care, and the confidence you have in their quality. When conditions permit, it is the best to make a large exhibit, for several reasons. If you have a goodly number you will have a better opportunity of selling some of them, provided you wish to do so. It will make a better impression on those who may in the future be your customers.—R. H. Jones, in Commercial Poultry.

It is well known that he seldom lives frugally who lives by chance. Hope is always liberal, and they that trust her promises make little scruple of reveling today on the profits of tomorrow.



Flock of 3-months-old Pullets fed for first six weeks on **Coulson's Special Chick Food,** and afterwards on **Coulson's Growing Chick Food.**

Coulson Poultry and Stock Food Company - Petaluma, California

Germain Seed Company, Los Angeles, Agents for Southern California

WESTERN DISTRICT OF THE WHITE PLYMOUTH ROCK CLUB MEETING.

The growth of the White Plymouth Rock Club has been so great that the organization has been divided into five districts, each being represented by a governor.

The western district comprising Mexico, New Mexico, Colorado, Idaho, Utah, Washington, Oregon, Montana and California, will hold its first yearly meeting in Salt Lake City January 23, to 26, 1907. The meeting is not simply to boom the White Rock, but to promote interest in breeding fancy poultry, and the members are urged to send their birds and if possible attend themselves. D. T. Tolintick of Jacksonville, Ill., will judge.

The premium list of the Utah State Show does not mention the fact but I am advised by the secrtary, Mr. Sanders, that, in view of the fact that our district meeting is being held in connection with their show, that no entrance fee will be charged for White Rocks entered by members of the club. Let us give them a hearty response.

WILLIAM M. HUMPHREYS,
Governor western district.

THE SMALL FARM AS A TRAFFIC BUILDER.

If the railroads which received such magnificent gifts of public lands, a few decades ago, had possessed the light of the present day as to the superior traffic producing qualities of the small farm as compared with the big estate or "ranch," might not the history of railroad development have been different? Those lands were mostly sold in large blocks to speculators. These, holding them for a rise, forced immigration in thin streams farther and farther west, where the best lands were in turn tied up. The result was a sparse, widely distributed population. The railroads had to build long lines in pursuit of traffic, which, had the possibilities of the small farm system been known, could have been secured by shorter and less expensive ones.

Irrigation in the West was brought about a reversal of former processes in development. Before the day of irrigation it was almost invariably the case that the railroad preceded and attracted population. Now the population gathers, in the areas selected for irrigation projects, so rapidly that railroad managers have to 'step lively" in order to meet its demands and secure its traffic. From its inception, every irrigation project is the source of a great transportation business; which, so far from diminishing when construction work ends, goes on increasing.

The Burlington road recently sent out a large party of its officials on a tour of inspection of the areas in the "New Northwest" which are about to be irrigated with the purpose of making preparations in season for handling an immense traffic which they knew would follow. With the "creation" of this traffic the road had nothing to do. The Reclamation Service and the settlers do the creative work; the railroad simply profits by it. That is something different from the "development" which went on in the days of the land grants.

The first general convention of those vitally interested in the reclamation of the semi-arid regions of the United States by systems of scientific farming is hereby called to meet in the City of Denver, Colorado, on January 24th and 25th, 1907.

When writing advertisers mention Cultivator

Starbuck's Barred Plymouth Rocks

We Trap-Nest Our Hens. Bird Laying Qualities are inherited. Why set from poor layers? We use pedigreed cockerels whose mothers have for over six generations laid over 200 eggs per year. Eggs from old hens, $1.50 and $2.00 per setting of fifteen; from pullets $1.00 per setting of 15.

Wm. Starbuck - Fullerton, Cal.

200-250 Egg Fowls | **WHITE WYANDOTTES** | Unsurpassed Show Record

Hatchable **EGGS** from **mature,** standard-bred, **heavy laying** fowls is our specialty. Clear eggs replaced. Eggs for **settings,** by the **100** or by the **1000,** from show matings and utility matings. **Bargains** in **Stock.** Write for our **new** catalogue.

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A. L. R. MANTZ **Rural 21, Box 98k** **SAN JOSE, CAL.**

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Country Business and Farm Loans a Specialty

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DIRECTORS—John R. Vogel, Lee A. McConnell, H. L. Percy, W. J. Sherriff, John A. Murphy, J. H. Lapham, Frank A. Dailey, Charles Ewing, F. M. Douglass.

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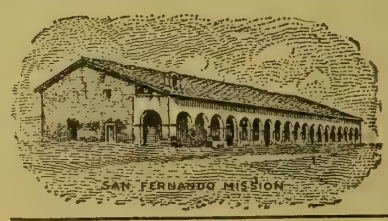
Incubators? **Baby Chicks?**

Must Hatch Incubators

Hatch all the fertile eggs and produce vigorous, healthy chicks—two factors that count in the poultry busiuess. We operate the most extensive manufacturing and poultry plant on the coast, and guarantee all our products. If you are in need of anything for the poultry business, write for our illustrated catalogue "B" We have the largest hatcheries in the world, and furnish the best S. C. White Leghorns it is possible to produce.

Order Early and Get he Desired Dating. MUST HATCH INCUBATOR CO. Petaluma, Cal.

Mission View Poultry Ranch



WHITE WYANDOTTE WINNINGS, 1906

Four Firsts out of 5; 3 Special Ribbons out of 4 and Silver Cup, the specials being given by the National White Wyandot e Club. Won all prizes on Hens but one and all Pullet prizes were won by my stock, one of my customers winning two Cockerels, 1st and 3rd, Cocks 2nd and 5th, Pens 1st, 4th and 5th. **Mammoth Bronze Turkeys and Buff Cochin Bantams, Silver Laced Wyandottes and Lakenvelders** For Sale Cheap. Address

Mrs. C. D. Hubbard Box 282 San Fernando, Cal.

Yes, We Can Supply Almost Any Kind and Quantity of Thoroughbred Poultry

Eggs By the Setting, By the Hundred, By the Thousand

Southern California Agents **Cyphers** Incubators and Brooders, Poultry Foods

KLONINGER BROS.

POULTRY SUPPLIES

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Picking Bags

WE MAKE THEM

We are the original manufacturers of the Bottomless Fruit Picking Bags, and own the patents for same. Not only do we manufacture for the entire Southwest, but our bags may be found from the Great Lakes to Florida.

WOODWARD Bottomless Orange and Lemon Picking Bag, No. 1, $1.25; No. 2, each, $1.50.

WILSON Bottomless Fruit Picking Bags, No. 1, $1.10; No. 2, $1.25; No. 3, $1.50. Apple Bag No. 4, $1.25.

The Wm. H. Hoegee Co., Inc.
138-140-142 South Main Street, Los Angeles, Cal.
Long Distance Exchanges 87

Whale Oil Soap

Barrels, Half Barrels, and in Kegs.

C. C. C. Anti-Carbolic Tree Spray

This spray is ready for use by simply adding cold water. It assimilates perfectly and forms no sediment. Makes the trees clean and healthy. More **effective**, and **cheaper** than lime, sulphur and salt, or caustic soda.

Whale Oil, Fish Oil, Crude Carbolic Acid, Red Arsenic

☞ WRITE FOR PRICES ☜

California Compounding Co., Inc.
Long Distance Telephone Works, 207-209-211 West Taylor St., San Jose, Cal.

20,000 Citrus Trees 20,000

Washington and Thomson's Improved Navels and Valencias Seedless Grape Fruit

One and Two-year Buds, Clean, Healthy, Vigorous Stock.
Better Secure Your Stock At Once, as the Supply Is Short.

Pollard Brothers Alhambra, California

Tom Lewis' Fertilizer

The Best and Cheapest

For Orchard, Garden or Field it has no equal. A trial will convince you of its merits. Send for my circular of testimonials.

Tom Lewis brought to this office an orange weighing two (2) pounds, grown by W. J. Wilson, a prominent orange grower and vineyardist of Newcastle, Placer County, who has used Tom Lewis' Fertilizer for four seasons and swears by it.—FROM SACRAMENTO EVENING STAR, DECEMBER 23, 1904.

Office and Works, 1916 and 1918 10th St., Sacramento, Cal.

Little Wonder
Engine and Pump

The **Little Wonder** is still a favorite. Those who have used it constantly say "It's a winner." Also that it's true to name in that it is a "Little Wonder." It is a handy little pumping and general utility engine. It will run the pump, feed cutter, the grinder, the churn—any old thing on the ranch.

Wm. Gregory
602 No. Main St., Los Angeles, Cal.

National Wood Pipe Company

Woodward Pat. Machine Banded Pipe, Wheeler Pat. Continuous Stave Pipe, Bored Wood Water Pipe

Made from California Redwood **WOOD PIPE** Or Selected Puget Sound Pillow Pine

Puget Sound Office, Olympia, Washington Los Angeles Office, cor. Sixth and Mateo Sts.
San Francisco Office, temporarily located at 518 11th St., Oakland, Cal.

A Booklet, "The Whole Story About Wood Pipe," mailed free upon request.

CITRUS GROWERS INSTITUTE AT RIVERSIDE.

Arrangements are being made for a gathering of citrus growers at Riverside during the latter part of January. Some of the questions which will be discussed will be;—"What Feature of Orchard Management, or after Management of Fruit, have produced the best results?"

The relation of the Citrus Experiment Station to the University of California."

"The practical value of Scientific Work in Commercial Results."

"What are the Specific Requirements for Producing the largest proportion of Fancy Fruit."

"What are the urgent Practical Problems to which the Citrus Experiment Station should give early attention."

Proposed Experiment Station work."

"What methods of Fertilizing Orchards have produced the best results."

"What definite progress has been made in fighting Insect Pests."

It is proposed to make this meeting one of the largest gatherings of citrus growers ever held in California and representative from all the citrus districts of the State are expected to be present.

The speakers will include Dr. Benjamin Ide Wheeler, Prof. E. J. Wickson, Prof. Ralph Smith, Mr. C. C. Chapman, Mr. R. C. Allen, Mr. C C. Teague, Mr. J. W. Jeffrey, Mr. S. A. Pease, and others prominent in citrus culture.

ORCHARD PLANTING.

With natural conditions favorable to the exploitation of rural economies and agricultural and horticultural wealth, it is no wonder that within a score of years California has become recognized as the center of fruit production in the United States, and one of the leading horticultural sections of the world, whose development is after all, only in its infancy.

Radical differences in soils and climates are often to be met with in the same orchard, and one locality is often blessed with as great a diversity as may be found in a whole State east of the Rocky Mountains. Hence local horticultural conditions are of prime importance when planting for profit is the consideration. Indeed, it is our experience that it is the very keystone to the successful prosecution of fruit culture as applied to California and the Pacific Coast.

Taking it for granted that the intending planter is reasonably familiar with the local conditions prevailing in his locality and on his land, a few suggestions on methods of planting will be found timely. Obviously, it is of the utmost importance that the land be put in first-class condition ready to receive the trees. This is accomplished by thorough plowing and cross plowing, followed by subsoiling and cultivation, until the soil is friable as an ash heap. Drainage should also be considered if the land is low and the trees are liable to "wet feet" during the wniter or rainy season. Be sure to have the future orchard symmetrical in order to economize the area to be planted. There are two methods or systems whereby this may be attained, viz.: the square and equilateral triangle.

After the field has been thoroughly tilled, and the ground plotted off to either of the preceding systems, and the trees have been provided, the next thing is to dig the holes, which should be deep and of ample size—the better the soil is worked and the roots of the tree spread out, the better the growth will be. In soils underlaid by a stratum of hard pan, it is essential to dig or blast through it. Trees cannot prosper in a soil so close and dense as to prevent root growth, which the breaking up of the layer of hard pan relieves.

A book is a living voice. It is a spirit walking on the face of the earth. It continues to be the living thought of a person separated from us by space and time. Men pass away; monuments crumble into dust—what remains and survives is human though.

The talkative listen to no one, for they are ever speaking. And the first evil that attends those who know not to be silent is, that they hear nothing.

I put MACBETH on my lamp-chimneys as I am satisfied to be known as the maker of the only good lamp-chimney.

There are other lamp-chimneys, but their makers fail to own them. It's no wonder.

My Index is useful to everyone who owns a lamp, and it's free.

Address, MACBETH, Pittsburgh.

THE FRESNO NURSERY CO.

INC. CAPITAL PAID UP, $50,000.00

Can Fill Your Orders for

GRAPE VINES GRAPE CUTTINGS
All Varieties
FRUIT TREES OF ALL SORTS

Price List Free. Address us

P. O. Box 42
FRESNO, CALIFORNIA

ESTABLISHED 1889

Geo. B. Warner
Orange County Nurseries

Grower and Dealer in Citrus and Deciduous Trees of All the Standard Varieties

Grafted Walnut Trees a Specialty. Budded Loquats, Roses, Grape Vines, Berry Plants, Cypress, Etc. Street and Ornamental Trees, Shrubbery, Blue Gums. Only clean, healthy stock offered

Residence, 202 E. Tenth St. Telephone S. S. Red 92. **Santa Ana, Cal.**

Orange Seed Bed Stock

First-Class, Clean, 1-Year-Old Trees
Better Get Your Order in Early

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Electric Frost Alarm Thermometer

Automatically rings a bell to announce the approach of frost. **Frost Prevention Co., Fresno, Cal.**

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FIRST-CLASS WORK
PROPER PRICES

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LOS ANGELES

Thoroughbred Poland China Swine
Black Minorca and Barred Rock Poultry
High Grade Stock of Best Strains.
Young Stock For Sale.
M. Bassett - - Hanford, Cal.

When writing advertisers mention Cultivator

The Produce Markets

Los Angeles Markets

LOS ANGELES, Jan. 2. 1907.

Butter

Local Creamery, 2-lb, sq.	77½
Valley Creamery, fancy	75@77½
Coast, fancy	70@72½
Cooking	22@24

Cheese

Cal. Young America, per lb	18
California Anchor	17
Cal. 3-lb. hand	19
Northern	17
Domestic Swiss	20
Imported Swiss	28

Eggs and Poultry

Eggs have taken a tumble of five cents during the past week.

Eggs, fresh ranch, per doz	35
Northern candled	34
Fresh Eastern	28

The following are average prices which dealers pay to producers for live weight:

Hens, per lb	14
Young Roosters, per lb	16
Fryers	16
Broilers, per lb	18
Old Roosters	8
Turkeys	17
Geese	12
Ducks	13

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lb	7@7,25
Prime Steers	4
Cows	3@3½
Calves, per lb	5
Sheep, ewes, per head	4.00@4.50
Lambs, per head	3.50@3.75
Wethers	4.75@5.25

Potatoes

Salinas, per cwt.	2.00
Burbank, Local	1.90
Highland	1.85@2.00
Sweets, Yellow, per sack	3.00

Vegetables

Onions are firmer and some dealers have made an advance in their selling price.

Beets, per doz.	20@25
Bell Peppers, Green, lb	3@4
Chili Peppers, Green	2½@3½
Chili, Dried, per lb	20
Cauliflower, per doz	1.25
Cucumbers, per doz.	1.00
Cucumbers, per box	75@1.00
Carrots, per doz.	20
Celery, per doz.	40
Casaba Melons, per crate	1.75@2.00
Egg Plant, per lb	12
Garlic, per lb	6
Green Corn, local, per sack	75@1.25
Green Onions, doz. bunches	25
Lettuce, per crate	1.00
Lima Beans, per lb,	6@8
Onions, Aust. Brown, sk	1.25@1.35
Onions, Y. Danvers	1.25
Parsnips, per doz	25@30
Rhubarb, per box	75
Radishes, per doz.	10@15
String Beans, per lb	3
Sugar Peas, per lb	7@8
Summer Squash, per box	40
Turnips, doz. bunches	15@25
Tomatoes, per box	65@75
Wax Beans, per lb.	10@12

Citrus Fruits

Lemons	3.00@5.50
Valencias	3.50@4.00
Navels	3.00
Grapefruit	3.50
Grapefruit, seedlings	3.00

Fresh Fruits

Apples, Bellefleur, per box	1.40
Apples, Spitzenburg	2.00
Apples, Fall Pippins	75@90
Figs, Black, per lb	8@9
Figs, White, per lb	8@9
Pears, Bartlett, per box	3.50@4.00
Pears, Winter Nelis, per lb	6@7
Blackberries	12
Raspberries	20
Strawberries	20
Quinces, box	1.00
Grapes, Muscat	1.50
Grapes, Blk. Morocco	2.00
Red Tokay	2.00@2.25
Grapes, Cornichon	1.25@1.50

Dried Fruits

Evap. Apples, fancy, per lb	9½
Apricots	17
Peaches	11@12½
Pears	13
Plums	11
Prunes, fancy	7@9

Beans, Dried

Limas, No. 1, per cwt	5.00
Pink, No. 1	2.75@3.00
Lady Washington	2.90@3.00
Small White	3.60@3.75
Black Eyes	4.50@5.00
Garvanzas	4.25@4.50

Honey

The figures below are jobbers prices, that is, prices at which the jobber sells to retailers and others in small lots. The producers can take from this his freight to Los Angeles and one cent per pound for commission and will have left the net price to him.

Extracted, water white, per lb	
60-lb. cans	7½@8
Extracted, white	7½
Light Amber	7
Comb, water white, 1-lb fms	16
Light Amber	14
Beeswax	25

Nuts

Almonds, new, per lb	19@20
Peanuts, Virginia	7
Peanuts, California	6½
Walnuts, No. 1, S. S.	14@15

Hay

Barley, No1	14.00@16.00
Barley, No. 2	12.00@14.00
Alfalfa, Local, per ton	15.00
Plain Oat Hay, No. 1	14.00@16.00
Plain Oat Hay No. 2	800@1300
Wheat No. 1	14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, No. 1, per cwt	1.40
Barley (to producer)	1.00@1.05
Rolled Barley	1.40
Corn, per cwt.	1.40
Cracked Corn	1.45
Feed Corn Meal	1.45
Shorts	1.45
Bran	1.20
Oil Cake Meal	2.50
Cocoanut Meal	1.50

San Francisco Markets

SAN FRANCISCO, Jan. 1, 1907.--

Butter.

California, extra, per lb	35
California, firsts	30
California, seconds	26
Packing stock	21

Cheese

New California, fancy	14½
Cal. Young America, fancy	15½

Eggs and Poultry

Fresh Ranch Eggs	42
Eggs, first, per doz	40
Hens, per doz., small	5.50@6.00
Hens, large	6.50@8.50
Young Roosters, large	600@7.50
Young Roosters, small	4.50@5.50
Fryers, per doz	5.50@6.00
Broilers, per doz.	3.00@4.50
Old Roosters, per doz	5.00@5.50
Ducks, young	5.00@7.00
Geese; per pair	1.50@2.00
Turkeys, per lb	18@20

Live Stock

Steers, No. 1.	7½@7¾
No. 1 Cows and Heifers	5½@6
Hogs, 80 to 130 lbs	6@6¼
Hogs, 250 to 350 lbs	6½
Calves, per lb	4@5
Lambs, yerlings	5½@6

Potatoes

Oregon Burbank	1.45@1.75
Salinas Burbanks, ctl	1.50@2.00
Rivers	1.00@1.40
Sweet Potatoes, ctl	1.74@2.00

Vegetables

Asparagus, per box	125@1.50
Cucumbers, per doz	1.00@1.25
Chili Peppers, Green	50@85
Egg plant per box	3.00@3.50
Green Peas, per lb	9@12
Summer Squash, large crate	1.00@1.25
Onions, Red, per sack	85@90
Onions, Yellow	75@90
Peppers, Green, Bell	40@75
Rhubarb, per box	75@1.00
Summer Squash, large crate	2.00
String beans	15@17
Tomatoes	1.25@2.00
Wax Beans	15@17

Citrus Fruits

Lemons	3.50@5.50
Valencias	300@400
Sweets	3.25@3.50
Navels	1,75@3.50
Seedlings	2.50@3.00
Grapefruit	2.00@3.50
Limes	3.50@4.00

Fresh Fruits

Apples, fancy, per box	1.25@1.50
Apples, common, per box	75@1.00
Blackberries, per chest	3.00@4.50
Cantaloupes, large crate	40@1.00
Grapes, Seedless	60@90
Grapes, Black	40@75
Grapes, Muscats, crate	100@1.25
Grapes, Tokay	80@1.10
Plums, per box	75@1.00
Pears,	1.50@2.00
Prunes, per box	60@85
Raspberries, per chest	12.00@14.50
Strawberries, Longworths	7.00@8.00

Dried Fruits

Apples (evap.)	7@8
Apricots, per lb	15@18
Figs, white	2½@4
Muscatels (loose)	7@8
Prunes	2@2½
Peaches	10@12½
Raisins, seeded (1906)	8½@10
Thompson, unbleached	7½
Thompson, bleached	9@11

Beans and Seeds

Limas, No. 1	4.25@4.40
Pink	2.10@2.25
Large White	2.15@2.30
Small White	2.80@3.00
Black Eyes	4.50@4.70
Red Kidneys	3.75@4.00
Bayo	2.30@2.40
Brown Mustard	4.25@4.50
Yellow Mustard	4.25@4.50

Hops

1906 Crop (future)	12½@16

Nuts

Almonds, new	15@17½
Peanuts, Virginia	6½
Peanuts, California	5½@6
Walnuts	11@15

Honey

Clear White Comb	16½
Amber	14@15
Extracted	5½@7

Hay

Barley, No 1	12.00
Barley, No 2	10.00
Alfalfa, local	9.00@11.00
Oat	12.00@15.00
Wheat No. 1	17.00@18.00
Wheat, No. 2	13.00@16.00

Grain

Wheat No. 1	1.22@1.24
Barley No. 1	1.12@1.15
Corn, small yellow	1.50@1.55
Corn, yellow	1.27@1.30
Oats. White	1.45@1.55
Oats, Red	1.20@142½
Ground Barley, per ton	24.00@25.00
Bran, per ton	20.00@22.00
Straw, per bale	55@70
Feed Corn Meal, per ton	32.00
Cracked Corn, per ton	32.00
Oil Cake Meal, per ton	38.00
Cocoanut Meal, per ton	25.50
Calalfa Meal, per ton	21.00
Mealfalfa, per ton	21.00

Citrus Markets

The Eastern holiday trade in oranges has been unusually active and substantially everything offered has been taken, even though prices have ruled moderately high. Really good fruit, as is usual at this season, has been scarce. This has helped the market, but it is to be doubted whether shortage in anything really helps as much as liberal quantities at moderate prices, which insure free buying on the part of all classes of consumers. It isn't so many years ago that all oranges for the holidays came from abroad and their cost prohibited all but the more fortunate from having them for Christmas.

Florida helped to modify these conditions. The stock from that State was fairly satisfactory and as methods of cultivation and selection improved, there was a marked improvement in the fruit.

Next came oranges from the West Indies. These were rather indifferent in quality because they were picked from trees which had never been cultivated. And then came the development of the orange industry in California and sales have been liberal ever since.

At first it was impossible to obtain navel oranges in time for Christmas, but now large quantities are annually shipped here for the holidays. No one says or thinks that the fruit which comes at this time of year is as good as that which comes later, but the navel orange is such a favorite in New York that even when they are not up to the highest standard, they sell well. They have fairly good color and the decorative qualities are far more satisfactory than those of even the best Floridas. It is hoped that with the developments in orange culture which is going on throughout the producing belt in California, eventually fully ripened and well-colored fruit can be laid down in the eastern cities in December. It is not impossible and it is certain that Californians will accomplish all that can be done in this direction.

The Floridas which are displayed upon the stands are not of attractive appearance. They are spotted and otherwise disfigured. Of course this makes a difference in the sale. Many buyers will not take oranges which do not look well and it is certain that the Florida orange, on the average, is a poor-looking specimen of fruit this year. Perhaps some day a way will be found to develop the pale, spotted-skinned stock of Florida.

Not all Florida fruit is spotted, but the bulk of it is and those who do not feel as though they could afford to pay a fancy price are compelled to take the unsightly-looking stock. Then they sigh for the navels and say that all navels look well. It is pointed out that the difference between the growth of oranges in the brillant sunshine of California and the damp and cloudy atmosphere of the Florida sand dunes must be marked. Some time this fact will be even better appreciated, but now the effect is to make the Florida orange a slow seller in competition with the golden fruit from the Golden State.

NEW YORK MARKET.

December 31, 1906:—Navels are doing better and show from 10c to 30c advance. Lemons also show slight advance. Six carload of oranges and one carload of lemons sold today. It is raining.

NAVELS—	AV.
Camellia, ex ch, Mutual O. D.	$3.00
Highland, ch, Mutual O. D.	2.90
Mariposa, ex fy, C. C. U.	2.90
Producer, ex fy, Redlands O. P.	3.10
Alhoha, ex ch, Redlands O. P.	2.75
Sunshine Grove, J. F. Bowen	2.90
Sunrise Grove, J. F. Bowen	2.90
The Fates, King Ft. Co	2.80
Gavilon fy, Speich & Co.	2.70
LEMONS—	AV
Independent, fy, Highland	3.55
Independent, ch, Highland	3.20
Independent, or, Highland	3.10
Stock Label, Highland	3.10

Philadelphia Market.

December, 31, 1906.—Market is steady. It is raining. One carload of navels and one carload of lemons sold. Florida oranges sold here today at from $2.00 to $2.80, averaging $2.65.

LEMONS—	AV.
Visalia, fy, T. C. Fruit Ex.	3.35
Lemon Cove, ch, T. C. Fruit Ex.	3.15
NAVELS—	AV.
Roughrider, fy, C. C. U.	2.65

Boston Market.

December, 31, 1906.—The market is very strong. It is raining. One car on track.

NAVELS—	AV.
Mariposa, fy, C. C. U.	2.80
LEMONS—	AV.
Pet, ex, ch, S. A. Ft. Ex,	3.15

Pittsburg Market.

December, 31, 1906.—The market is steady. Weather clear and warm.

Highland, ex fy, Highland F. G. A.	2.90
Heapgood, fy, Patte & Lott	2.75
Lochinvar, ch, R. H. Ft. Ex	2.75
Labelle, st, Highland F. G. A.	2.90
Belt, ch, R. H. Ft. Ex,	2.70
LEMONS—	AV
Harbor, fy, Chas. Mohnike	3.20
Standard, Chas. Mohnike	2.80
A. A. A. A. ch, Chas. Mohnike	3.25

St. Louis Market.

December, 31, 1906.—Market is weak. It is raining. Six cars sold. Six on track. Floridas sold here today at $2.30.

NAVELS—	AV.
Pepita, ch, T. C. Ft. Ex.	2.60
Stork, ex ch, S. A. Ft. Ex.	2.35
Peerless, ch, S. D. Ft. Co.	1.35
Full Value, st, T. C. Ft Ex.	2.45
Badger, ex fy, C. C. U. Tulare Co	1.80
Sunset, ch, Lemon Cove	1.25
LEMONS—	AV
Greyhound, ch, S. A. Ft. Ex.	2.95

Cincinnati Market.

December, 31, 1906.—The market is declining. It is raining. One car on track. Florida Brights sold from $1.50 to $1.80. Russetts, $1.50 to $2.00.

LEMONS—	AV.
Select, ch, S. A. Ft. Ex	3.60
Greyhound, ch, S. A. Ft. Ex.	3.05
Pet, ex ch. S. A. Ft Ex.	3.05
Duck, st. S. A. Ft. Ex	2.95
NAVELS—	AV.
Blue Label, fy, T. C. Ex. Lindsay	2.05
Red and Blue T. C. Ex. Lindsay	1.90
Red Label, ch, T. C. Ex, Lindsay	2.05

Cleveland Market.

December, 26, 1906.—The market is firm on good stock. The weather is cold. Three cars sold. Three oranges and two lemons on tracks. Three cars sold.

NAVELS—	AV.
Tulip, ex, ch, T. C. Ft. Ex.	$3.10
Serenade, fy, T. C. Ft. Ex.	2.95
Pepeta, ch, T. C. Ft. Ex	2.80
Mariposa, fy C. C. U.	2.70

LOCAL CITRUS SHIPMENTS.

LOS ANGELES, Dec. 31, 1906.—Friday, December 28, forty-eight carloads of oranges and eight carloads of lemons.

Saturday and Sunday, December 29, 30, forty-three carloads of oranges and fifteen carloads of lemons.

Total to date this season, 1646 cars of which 377 cars are lemons.

Total to same date last season, 3237 cars of which 544 were lemons.

Seedless Prunes.

One of the growing table dishes in the line of dried fruits is Seedless Prunes, prepared by the Selma Fruit Company. The saving in this article is seen in freight. It is nicely packed in pound cartoons and when eaten resembles very much seedless raisins in taste. The Selma Fruit Company is the only one that seeds prunes by machinery.

SACKS!

DO YOU NEED ANY?

You can always get them at L. Bernson & Co., the largest Bottle and Sack Dealers in California. 820-26 Stevenson Ave., Los Angeles Phones; Broadway 4611, Home 3439.

Queries and Replies

Grape Questions.

I wish to ask a few questions as I wish to put out a field of grapes and want late varieties. My land is mostly granite soil. Cañon sloping to the south. Some of it is clay subsoil, that is the height of it, and some of it is flat, somewhat bottom land. Which would suit Emperor grapes and which Golden Queen, Cornichon and Tokay. Elevation is 1900 feet. Is Golden Queen as hardy as Muscat? Muscats do well here, but not so large as bottom land produces them. Do you think the McPike grape would do well here on such land as I describe? I also have some damp and wet land, which slope would suit grapes the best, facing south or north? Some seasons we have late frosts in spring. Is it injurious to trim grapes late enough to make them bleed freely? Do you think winter Bartlett pears would do well in this altitude? The summer Bartlett don't always make a crop on my place, but are healthy otherwise. Apples do fairly well, but mildew some.—M. A. K.

Cornichon and Tokay do best on a heavy subsoil. Emperor does best on a heavy sandy loam in Southern California. It is a poor bearer on light sandy land while Golden Queen is an enormous bearer on such land. McPike bears well on a sandy land. McPike does this in the Sacramento Valley We would plant late grapes on the north slope as it would have a tendency to make them mature later and would also hold them back later in the spring and thus tend to skip the late frost.

Late pruning will not injure the vines if it is not put off so late that it will cause excessive bleeding. It will have a tendency to make the vines come out later.

Golden Queen is as vigorous as Muscat.—J. W. M.

The Dual Cow.

A correspondent writes to ask our opinion of the dual purpose cow for California.

The answer can only be made, we think ,as the editor of the Journal of Agriculture has stated it:

"If you want beef cattle, get beef breeds. If you are running a dairy for something besides glory, get the dairy breeds. It is one of the impossibilities for a cow to be two things—a real profitable dairy cow and a fist-class beef animal. The functions are too widely different; the characteristics are too much at war with each other."

There are advocates of the dual-purpose cow, to be sure—there are advocates of every sort of theory. But it appears to our mind that that particular theory is knocked out by the two questions of one of our leading scientific farmers: "Instead of keeping a dual-purpose cow to yield $40 worth of milk a year, why not keep the special-purpose dairy cow that will yield $80 worth? Instead of a dual-purpose cow that will raise a steer which at two years old will bring $40, why not keep the special-purpose dairy heifer which at two years will produce a calf, convert her food into milk and herself command as high a price upon the market as the steer of the same age?"

The dual cow is not so profitable in California as in the Eastern States, because we do not have the roughage to feed, nor do we have the summer pasture to range the cow on. The feed we give costs too much to attempt the raising of the dual purpose animal. We can succeed with any of the well-classified types of dairy cows, if we will, but the dual breeds are experimental and will remain so until we have arrived at knowledge of how to raise the roughage to best provide for the general purpose cow.

Pasture Weed.

Can you tell me what the enclosed plant is. It grows very thickly in my pasture. Is it Australian salt grass? Will the stock eat and will it run out pasture grasses?—J. G., Porterville.

The plant having neither flower or fruit we cannot determine with certainty what it is, but it is not a salt grass (atriplex.) Whether it will "run out" your pasture grasses or be eaten by the stock is for you to determine by observation, we have no better means for finding out than have you. If it is what it appears to be in the eyes of our botanist, it is a plant growing on low alkaline flats, conditions peculiarly suited to its successful growth, but not for grass.

Moving Palms.

A friend of mine gave me a fan palm which I want to move onto my place. The palm is as large as a wash tub near the ground. Please tell me the best time to move it, and tell me what I should do so I can get it to grow after I get it moved. If you don't think it will grow after moving, please tell me so in the Cultivator. Hoping to hear from you soon.—J. F., Del Rey.

This matter was very fully treated in The Cultivator some time ago—more fully than it will ever be again—such articles are worthy of preservation. Defer moving as long as possible. February is soon enough. Do not ball or box but take along as much earth as clings to roots. Set up and prop until earth is firmly settled. Give lots of water, preferably in the trunk, close to top and allow it to run down to basin below. Trunk needs water to furnish in lieu of supply stopped by cutting roots. Native fan palms are easy to move.

Bean Planting.

When may beans be safely planted to avoid the weevil?—J. D., Los Angeles.

We understand that July 10 is as early as planting is really safe. This would shut out planting in districts having a well-drained soil and no irrigation water. We also wrote to Mr. J. B. Neff of Anaheim as many beans are grown in his district. He replies:

"I have made some inquiries about time of planting beans as a means of preventing damage by weevil. The largest grower here says that he has never had any damage by weevil in beans that were planted as late as July, 10th and that he has escaped weevil sometimes on those planted two weeks earlier. He says he has beans on hand now that are two years old and that are as good as when gathered. This of course refers to the small white and Lady Washington. He says he never saw weevil in Limas. I was shown some weeviled small white beans that were said to have been planted about July, 4th, but the grower was not quite sure of the date."

Caked Udder.

I have a cow that has a caked udder. Tne bag is hard and sore.

Give the cow a full dose of physic (1 1-4 pounds of Epsom salts and an ounce of powdered ginger, steeped in a quart of warm water) drench. Follow this with 1 ounce of fluid extract of poke root, and two ounces of potassium acetate dissolved in a quart of water, twice daily, and rub the udder well after each milking with the following ointment: Take of Resublimbed iodine, 2 ounces; lanolin, 1 pound; mix well and apply.

Breeding Cow.

I have a Jersey cow that leaps any fence I can raise. Have tied a weight to her, but she goes over, weight and all. Can you suggest something to keep her within bounds?—R. D. C. —Woodlands.

An inverted ox bow set in a four-inch eucalyptus stick about two feet long with a pole extending out in front, just long enough to clear the cows nose, when she raises her head to jump the fence, will remedy the trouble.

Don't keep dehorned cows and cows with horns together in the same yard. Dehorn them all. It pays to look after these little things. Do it before bad weather sets in.

Grape Pruning and Sour Sap.

Please answer through The Cultivator two questions and oblige. (1) How is the proper way to prune malaga vines, one year old, and is it necessary they should be staked? (2) I notice so much sour sap at the forks and base of my peach trees; orchard is two years old; eight acres; trees are in fine shape and look healthy, but would like to know the real cause of the sap appearing?—J. G., Dinuba.

Prune your one-year-old Malaga vines with two branches with two buds to each branch. For the third year and from then on prune to one short spur with two buds and one spur with four buds.

Some fungus disease has evidently attacked your peach trees and no doubt you will get relief by spraying with Bordeaux mixture. You might write to Prof. R. E. Smith at Whittier. He has a peach disease man in your part of the State now.—J. W. M.

Dahlias and Olives.

Please tell me if dahlias do best in sun or shade, and what is the best olive for family use.—A Subscriber, Kingsburg.

Dahlias should have full sun as they grow too much to vegetation rather than bloom if in whole or partial shade. The best all around olive is a large type of mission. It makes good oil and is one of the best pickle olives.

Kaffir Corn For Feed.

I should like a little information. I plant Kaffir corn for green feed, commence to cut it as soon as it is large enough and of course the second growth springs up and is nice feed, or would be if I dare use it, but I have a neighbor who came from Kansas where they grow a great deal of Kaffir corn, but my neighbor tells me they never feed the second growth as it kills the stock. So I have not used it. Do not care to experiment as I have some very valuable Jersey cows. Do you know anything about it? Is the second growth considered poisonous to stock? Is it or is it not used as feed? An answer through the Cultivator will be thankfully received.

D. F. F.

There is often trouble from cornstalks when over-fed or when the corn is frosted and then mildewed. There is a regular disease from feeding the second growth that prevails in the East but I have never known of it in California. Here the trouble is simply bloating, to overcome this feed the cornstalks in the mangers. Sometimes when mildewed the cows scour badly, this however happens with any musty or sour feeds. The mares with colts are even now running in our corn fields and it makes the best of feed for them.—M. E. S.

"The trouble," said the dentist, as he probed away at the aching molar, "is evidently due to a dying nerve.'

"Well," groaned the victim, "it's up to you to treat the dying with a little more respect."

LINERS

Liner Advertising

Advertisements in Liner Column 1½ cents per word. Eight words to a line. No advertisement taken for less than 25 cents.

WASHINGTONIA FILIFERA AND ROBUSTA and Euretia edulis palms, from 5 to 10 feet high, to exchange for other kinds of nursery stock or sold for cash. Give offers. Enough for carload lots. Erickson & Heinz, Brawley, Cal.

RANCHES AND ACREAGE WANTED—WILL sell your property for you if your price is right. List it with me. W. A. Colwell, 223 West Second St., Room 101, Los Angeles, Cal.

FOR SALE—BURBANK'S PHENOMENAL Berry Plants, true to name, in quantities to suit. For terms apply to E. Thompson, Box 630, Fresno, Cal.

FOR SALE—FIVE THOUSAND MAMMOTH Dewberry Plants will produce 600 crates to the acre. Write for prices to Oak View Berry Farm, Gridley, Cal.

FOR SALE—TWO THOUSAND SANTA BARbara Soft Shell Walnuts from 3½ to 8 feet high at 10 to 25 cents each. H. J. Hickson, Route 2, Burbank, Cal.

C. ANDREWS, 332 THIRD STREET, LOS ANgeles. Yards, North Southerland Avenue, Hollywood. Partridge Wyandottes. Winners at Los Angeles.

FOR SALE—WHITE PLYMOUTH ROCK Cockerels, Fishel strain. Some fine ones, $2 and up. P. M. Young, Lawndale, Cal.

WANTED—SOME MISSION OLIVES, ALmonds, Peaches, and some varieties of Grape Vines. Imperial Valley Nurseries, Imperial, Cal.

WANTED—HIMALAYA BLACKBERRY, McDowd Berry and Longworth Strawberry Plants. Give Price and all particulars. Address Lock Box 64, Gridley, Cal.

BUFF LEGHORN COCKERELS FOR SALE. Also some Black Minorca pullets. Sell to make room. Mrs. H. J. Warrick, Corning, Cal.

THE NEW SEED COMPANY

Morris & Snow

announce that their new seed store

Will Open about January 2

555 South Main St. Los Angeles

with a full line of all the leading varieties of

Vegetable Seeds
Flower Seeds
Plant Seeds
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Plants and Garden Supplies

The Highest Quality Money Can Buy

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Five-Five-Five—Three Fives
South Main St.
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Send for our Catalogue Ready January 20

Greatest National Bank West of Denver and South of San Francisco

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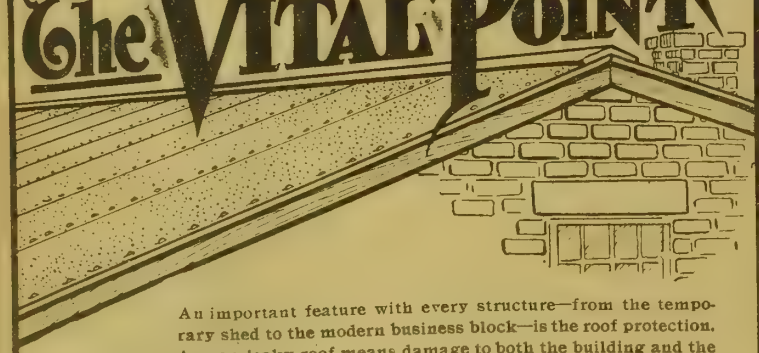
United States Depository for Government Funds

CAPITAL, $1,510,000
TOTAL RESOURCES, $19,400,000

We are prepared to extend to the small depositor the same personal and careful attention that we do to our largest accounts.

ADDITIONAL ASSETS—One Million Five Hundred Thousand Dollars invested in the stock of the Los Angeles Trust Company and the Metropolitan Bank and Trust Co., and held by the officers of the First National Bank, as Trustees, in the interest of the shareholders of that Bank.

The VITAL POINT



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Pioneer Rubber Sanded Roofing

Is proof against everything an ideal roof should be proof against. That wear-proof surface of hard flint sand adds years of wear to the roof.

Roofing Book "D" tells all about every class of roofing and building papers—it is sent *free.* Write for it.

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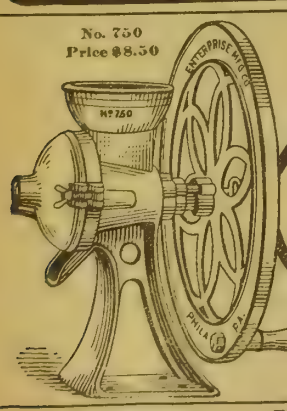


Happy Hens

are the busy ones that lay the eggs. Maintaining the health of your flock and keeping up egg production is largely a question of food; cracked grain, ground bone, shell, etc., are most important. You can turn grain and waste materials into money with the

ENTERPRISE Bone, Shell and Corn Mill

A thoroughly reliable mill for general use of farmers and poultrymen. Very useful for making bone meal fertilizer. Mill shown in cut, $8.50. Weight 60 lbs. Capacity 1½ bushels of corn per hour. Write for the *Enterprising Housekeeper*, a book of 200 choice recipes and kitchen helps. Sent free.

THE ENTERPRISE MFG. CO. OF PA.
243 DAUPHIN ST., PHILADELPHIA, PA.

WITH A SIEVERT OIL BURNER

You can burn 100,000 cubic feet of air with every 130 gallons of oil; this means perfect combustion. To burn more than 100,000 cubic feet of air with 130 gallons of oil, there is a decided loss of heat. To burn less than 100,000 cubic feet of air there is a loss of fuel.

The only safe and reliable burner on the market.
Send for full particulars.

SIEVERT OIL BURNER CO. 1005 N. Alameda St. Los Angeles, Cal

WHITE MINORCAS

We have taken the greatest care in the selection of our breeding stock, as well as importing fresh blood from the best Eastern strains. Price on eggs from selected stock, $2.50 per setting of 15, $4.50 two settings. Incubator lots $10.00 per 100. A few cockerels for sale, 8 months old, $2.50 and upwards.

Coulson Poultry and Stock Food Co., Petaluma, Cal.

Household Department

Counsel to a Friend

Give thy thoughts no tongue,
Nor any unproportioned thought his act;
Be thou familiar, but by no means vulgar;
The friends thou hast, and their adoption tried,
Grabble them to thy soul with hooks of steel;
But do not dull thy palm with entertainment
Of each new-hatch'd, unfledged comrade. Beware
Of entrance to a quarrel; but, being in,
Bear 't that the opposer may beware of thee.
Give every man thine ear, but few thy voice.
Take each man's censure but reserve thy judgement.
Costly thy habit as thy purse can buy,
But not expressed in fancy; rich, not gaudy,
For the apparel oft proclaims the man.
Neather a borrower nor a lender be,
For loan oft loses both itself and friend,
And borrowing dulls the edge of husbandry.
This above all—to thine own self be true;
And it must follow, as the night the day,
Thou canst not then be false to any man.—Shakespeare.

A Man and His Club

"YOU WAIT," Eleanor said to me whenever I complained about Jerome's remaining at home evening and never going to the club. "In a year's time you will be begging him to graciously grant you an occasional evening of his society. I know men and their ways."

Privately, I pitied my sister Eleanor; she had had such an unfortunate matrimonial experience and was so soured by it.

"I don't think you know Jerome," I told her, patiently. " He is the kind of unambitious man to settle down at home in a perpetual attire of dressing gown and slippers and let all of his interesting men friends drop. I have coaxed him, night after night, to go over to the club, just to keep in touch with his old set, but he won't listen to me; says he is perfectly happy and does not want to see anyone else. I believe in a man's running into his club now and then, if only to make him appreciate home the more."

"Poor misguided child," said Eleanor, commiseratingly.

This conversation took place when Jerome and I had been married ten months, and just six weeks later my husband came home early to dinner. This unusual departure from his customary habits filled me with consternation, but although I felt that something lay berind his promptness, I was totally unprepared when he remarked: "I believe I will run over to the club this evening. Election is pretty close, and I want to see some of the fellows about a deal in our district."

"By all means," I assented, cheerfully. "I am so glad."

I did not sit up for my husband. Once upon a time I read something somewhere to the effect that nothing irritates a man so much as to return from a pleasant evening to find a wife waiting for details of just how he spent the hours away from her. Therefore, I went to bed and to sleep. Nevertheless. I was scarcely prepared to find Jerome still absent when I awakened shortly after midnight. However, I pretended to slumber when he finally came home about 2 o'clock, and refrained from any comment on the lateness of the hour.

The next evening we resumed the persual of a book in which we were both much interested, Jerome reading aloud while I sewed.

We were obliged to stop at a most thrilling point by the advent of some chance callers, and I could scarcely wait until the next night to continue our story, but, alas! just as we were finishing dinner Jerome cleared his throat curiously and said:

"I find I must go over to the club again this evening. Hart said he wanted to see me on a matter of the utmost importance."

To say that I was startled would be expressing it mildly, but as I have always prided myself upon being consistent I swallowed my disappointment and managed a very creditable smile.

"All right," I said as cheerfully as possible, and then as he rushed off, added: "Have a pleasant evening."

"It won't be very pleasant, arguing with a lot of men," he grunted.

Resolutely I went to bed at the usual hour, but in spite of the utmost endeavor, sleep would not come.

Eleven o'clock, twelve o'clock, one o'clock struck; two o'clock, half-past two and still no Jerome. It was inconceivable that he should linger so over a mere matter of politics or business. Could it be possible that something had happened to him? Some accident?

Stung into uneasiness by the horrid fear, I stole out of bed and to the window.

The street stretched before me an avenue of silence. I bit my lips with nervous terror as the moments passed and no one came. Then at last a step resounded through the stillness. It was Jerome, it must be he; but the man, a small, thin person who walked with a jump, passed quickly.

Another length of silence, then the sound of carriage wheels. My heart stood still. He was hurt, then, and they were bringing him home to me, maimed, perhaps unconscious.

The cab drew up in front of the house and Jerome sprang out alertly. He came up the steps like a man well satisfied with himself.

I shivered back to bed, speechless with fury, but again feigned slumber and said not a word to my miscreant spouse.

The next morning Jerome was crosser than usual at getting-up time.

"I am worn out," he remarked, with the air of a martyr.

"I should think you would be," I retorted, "considering the time you came home last night.'

"Yes, I thought I never should get away. How those men can go on living like that, sitting around and smoking and arguing all night long every night, as they do, is beyond me."

This was somewhat mollifying, but he continued: "The worst of it is I have promised to go over again tonight. Hart has a banquet or something on, and you know it is very necessary that I stand well with him."

I closed my teeth with a little click.

"How about our reading?" I demanded.

"Awfully sorry, little woman, but you had better finish that book yourself; there is no telling when I shall be able to go on with it."

"Then you mean to go out every evening hereafter?" I inquired, controlling my voice as well as I could.

"I expect to have to go pretty frequently for the next few weeks. Of course, any time you want me especially to go out with you, just let me know a little in advance and I will try to arrange it."

"And do you intend to always return at 3 a. m., and require the services of a cab to land you home in safety?"?

My husband flushed furiously. He hates criticism.

"You have been at me all along to go to the club," he said angrily. "Now that I am obliged to go you are making a row about it. If that is not just like a woman!"

I shrugged my shoulders.

"I wanted you to go to the club occasionally, but had no idea you would suddenly take it into your head to spend every night there."

"That is just about the way you usually exaggerate everything," sneered Jerome.

"And you need not expect me to believe that you do go to the club," I continued warmly; "you would never keep such hours with a lot of men.,,

"Oh, now you are getting silly," said my husband, and he flung off, slamming the door behind him without a single attempt to pacify me.

Of course this strengthened my suspicions.

Some one has said that there is always a woman behind everything, and I wondered, miserably, who the other woman might be in my Jerome's case.

When Eleanor called that evening, accompanied by her newest admirer,

she found me writhing upon the bed and deluged with tears.

I told her everything in short, broken sentences. It was a relief to unburden my mind, and I knew she would blame my husband quite as much as he deserved. Eleanor never made excuses for the men.

She stared at me when I finished my pitiful story, as one who might say, "I told you so," but her first words were: "You are surely not going to stay here and mope?"

"What else is there for me to do?"

"Put your things right on and come to the theater with Mr. Harvey and me. We called to get you both, but as Jerry is not here there is no reason on earth why you should not go out and have a good time instead of making yourself miserable alone. Then you must come home with me and spend the night," she continued.

"Oh, Eleanor!" I gasped, "I couldn't do that."

"Why not."

"Jerome would be worried to death."

"I do not see why he should not be the one to worry instead of you. Teach the young man a lesson, I say."

"But he would never forgive me."

"All the better, if he cares no more than that. I should think you would have more independence. Besides he will forgive you; men always do, and when he thinks you have run off and left him for good, he will be willing to grovel, if it will only bring you back."

The thought of Jerome's groveling was particularly pleasing to me, and I began to dab the tears from my eyes.

I might as well have been at a funeral instead of the theater that evening, for all the enjoyment I got out of the performance. Neither did I sleep a wink the whole long night.

At 5 a. m. I stole into Eleanor's room.

"I am going," I said, rousing my sister with much difficulty. She sat up and blinked at me.

"Well, for goodness' sake go and leave me alone!" she retorted, and dropped straight back to dreamland.

I hurried through the deserted streets, feeling the chill of early dawn in my heart.

Suppose Jerome should refuse to forgive me. He was fearful when aroused.

I stole into my own home like a thief, moving as quietly as possible, but before I was well over the threshold my husband confronted me. He looked very unlike himself, with clothing disarranged, disheveled hair and wild eyes.

"Lola!" he cried, and the next minute I was lying on his heart and there were really, truly tear-drops on my face, a strong man's tears.

"Oh darling!" I sobbed, "I am so sorry."

"Where have you been? What has happened?"

With genuine shame I confessed my petty jealousy and how I had tried to punish him.

Jerome looked very serious.

"Dearest, I have had to go to the club these evenings. I did not like it one bit better than you did, but you know you want me to get on in the world and amount to something."

I nodded an affirmative.

"Well, if Johnny Hart carries the district he can put me in the way of doubling our income. You do not understand these things, and I did not like to talk about it when there was nothing certain."

"Oh, sweetheart! can you ever forgive me?" I sobbed.

"There is nothing for me to forgive, since I must have hurt you cruelly to make you run away from me; but, beloved, we must try to understand one another better and have more confidence."

"I shall always believe in you after this," I announced, firmly, "no matter what happens." And I meant it, too, just at that moment.— HELENE HICKS.

IT'S PENNY WISE

Policy to set out a good tree, costing good money and then let the sun burn the bark or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Manufacturing Company, 2124 Willow St., Los Angeles.

Piles Cured In 6 To 14 Days.
PAZO OINTMENT is guaranteed to cure any case of Itching, Blind, Bleeding or Protruding Piles in 6 to 14 days or money refunded. 50 cents.

RECIPES.

Nut Crack Night Bonbons.

Boil together uutil it threads, one pound of brown sugar, half teacupful of milk and two squares of grated chocolate, add a pinch of cream of tartar and when done add a tablespoonful of butter and remove from the fire, beat in two tablespoonfuls of cream and flavor with vanilla, pour on a marble slab and when cool enough to handle work with the hands for thirty minutes. Form into fancy shapes, with the addition of almonds, English walnuts, dates and grated cocoanut. Scoop out a small pumpkin, line with oil paper and use as a bonbon tray.

Pumpkin Chips.

Pare, slice and scrape the inside of a round, yellow pumpkin, cut into pieces one inch square and thin as a knife blade. Put to it an equal weight of white sugar and let stand twenty-four hours, there will then be sufficient syrup to cook it. Boil gently until nearly done, then add one lemon sliced thin for each pound of pumpkin, cook till fruit is clear. Take up and boil the syrup till thick.

Roasted Goose.

Select a green goose—one four months old—pick well; singe and clean carefully. Roast for two hours, dredging and basting frequently. Cook the liver and gizzard in a stew pan and prepare the gravy with them as for a turkey. Stuff with boiled chestnuts and serve with apple sauce and currant jelly.

These may be cut in the shape of wands, from sponge cake, and spread with a mixture of conserved cherries and nuts moistened with orange juice.

A WONDERFUL HEATER

It Solves the Problem of Fall and Spring Heating and Supplements the Regular Heating Apparatus in Mid-Winter

With the passing of the summer months comes Autumn, and with it the chilly nights and mornings which force us to turn our thoughts to the problem of heating our houses, and we begin to look over our stoves and furnaces and get them in repair for the cold winter months.

To start stoves and furnaces in the early Autumn brings more or less discomfort for the reason that they furnish too great heat during those portions of the day when the heat of the sun is still considerable. For such times the Perfection Oil Heater, equipped with a device which prevents all possibility of smoking, solves this hitherto perplexing problem.

There are also many times during the cold winter months, while the furnace and stoves are in operation when they may not be equal to the task of warming remote rooms, hallways, etc. This is more apt to be true in the early morning before the full efficiency of the regular heating apparatus is developed. In many houses there are rooms not reached by direct heat. At such times and in such places the Perfection Oil Heater will be found a very valuable auxiliary. It will enable the household to eat its breakfast in comfort instead of shivering with the morning chill.

The Perfection Oil Heater produces a surprising amount of heat immediately after lighting and will heat an ordinary room in a remarkably short time. They are strong and well made in a design pleasing to the eye, and they are light enough to be easily carried from room to room as required.

In these days of numerous devices for illumination, there are still many who have not provided themselves with satisfactory lamps. The Rayo Lamp makes it posible for everyone to have adequate light at a small cost. The Rayo Lamp is the best lamp for all-round household use. It is made of brass and beautiful nickeled, and is an ornament to any room whether in palace or cottage.

The Perfection Oil Heater and the Rayo Lamp form a combination that makes home bright and comfortable. Their absolute safety and very moderate price make them a valuable and easy acquisition to any home. Both heater and lamp are warranted.

When writing advertisers mention Cultivator

Have You an Extra Room to Heat?

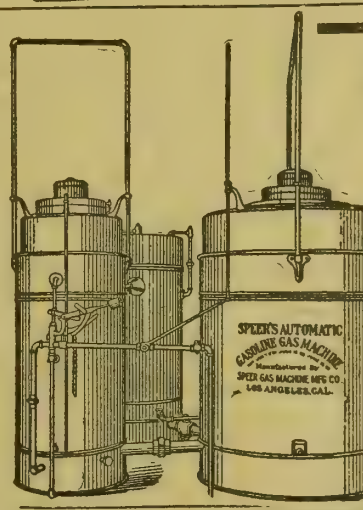
There need not be a cold room in the house if you own a PERFECTION Oil Heater. This is an oil heater that gives satisfaction wherever used. Produces intense heat without smoke or smell because it is equipped with smokeless device—no trouble, no danger. Easily carried around from room to room. You cannot turn the wick too high or too low. As easy and simple to care for as a lamp. The

PERFECTION Oil Heater

(Equipped with Smokeless Device.)

is an ornament to the home. It is made in two finishes—nickel and japan. Brass oil fount beautifully embossed. Holds 4 quarts of oil and burns 9 hours. Every heater warranted. Do not be satisfied with anything but a PERFECTION Oil Heater. If you cannot get Heater or information from your dealer write to nearest agency for descriptive circular.

The Rayo Lamp makes the home bright. Is the safest and best lamp for all-round household use. Gives a clear, steady light. Fitted with latest improved burner. Made of brass throughout and nickel plated. Every lamp warranted. Suitable for library, dining room or parlor. If not at your dealer's write to nearest agency. STANDARD OIL COMPANY.



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Make Your Own Gas and Save More Money

This Machine will do it for you and give you better gas than any gas company will sell you. Write for our catalog. Agents wanted in every town in California.

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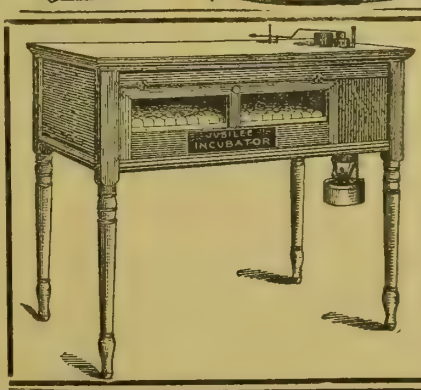

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Ask those who ought to know! Ask business poultrymen! They will tell you that for business results in Incubating and Brooding

The Jubilee Stands Supreme

Send for New Catalogue A, just issued.

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S. C. White Leghorn Eggs

For Hatching, from Captain Mitchell's Strain.
Large Birds. Prolific Layers. Large White Eggs.
Order Books Open for 1907 Season.

The Lincoln Avenue Poultry Yards

Carl C. Curtis, Owner, Pasadena, Cal.

Successor to Captain E. Pryce Mitchell

Emery's Pure Meat Meal

Ask nearest dealer for them, and take no imitations
Write for our free booklet, "Farmers Friend"
Valuable to all farmers and ranchers,

The Pacific Guano and Fertilizer Co.

Successors to M. Ohlandt & Co.

Don't believe all we say, but just enough to buy our Poultry Foods.

Emery's "B. B. & B."

San Francisco

AUCTION SALE

60 Head Cows and Horses

At 10 A. M.,

Tuesday, January 8th

CRYSTAL DAIRY
VERMONT AND GOLDEN AVE.,
LOS ANGELES

ONE MILE SOUTH OF AGRICULTURAL PARK

Sixty Head high-grade Jersey, Durham and Holstein Cows, 8 Head Horses, 4 Milk Wagons, Harness, Aerators, Mixing Cans, Boilers, Separator. Farming Implements. Also First-Class Milk Route; sale about $1000 per month. Everything pertaining to a first-class Dairy. The ranch is sold and we are ordered to vacate immediately, and must sell. The stock is all high grade. Select stock for milkers and quantity, best herd in the country.

TERMS—Eight months with approved security. Liberal discount for cash. Lunch at noon.

Take San Pedro Interurban or Gardena-Redondo electric car to Golden avenue.

ALLEN BROS., Owners

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WAGONS

There is always one by which the rest are judged. Ask any farmer which wagon he places the most confidence in; ask any expressman which wagon lasts the longest with fewest repairs. The answer will be,

The Studebaker

No one ever claimed to make a better wagon than THE STUDEBAKER. It couldn't be done. Many are said to be "just as good." If none is claimed to be better by the competitors, and the Studebaker is looked up to as the standard, isn't it pretty good evidence that it is the best?

Every wagon put out by the Studebaker factory is as near perfect as it is possible to make it. Everything from tongue to tail-board is of matchless superiority.

Don't waste money on an inferior wagon, but begin right and get a STUDEBAKER. These wagons, in various sizes, may be seen at the large salesrooms of the

Newell Mathews Company

200-202-204 No. Los Angeles St.
Los Angeles, Cal.

Catalogue sent free on request

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Ten Reasons

WHY THE

Addison Pump

Is Better Than All Others

1. It will pump more water with less power.
2. It is more substantially constructed.
3. Has no overhanging bearings to spring and cause friction.
4. Absolutely uniform motion—does not break rods.
5. Plunger leathers can be changed with less trouble and expense.
6. Water discharge in continuous stream—no pulsation.
7. Noiseless in operation.
8. Has no jar or hammer.
9. Perfectly balanced, so no braces are required to keep pump in position.
10. Will be in good working order when pumps with erratic or variable motion are in the scrap pile.

The "ADDISON" pumps more water for the amount of power consumed and with less liability of breakdown than any other pump.

With the recent changes in the factory and management we are prepared to make quicker delivery, and a better pump for less money than ever before.

It will pay you to write us for catalogue and prices before purchasing a pump.

When in town call at the factory and see our pumps.

Send for Catalogue B.

Addison Pump Co.

Cor. 1st and Cypress Sts., Pomona, Cal.

Phones: Home 91
Sunset, Black 1551

Petaluma Homes

$1,700 10 acres rich loam soil, 3-room house, barn, hen houses, wind mill and tank, growing crops, four acres in fruit. Price $1,700. Place located one-half mile from Cotati, which is located 8 miles from Petaluma on railroad close to station.

$1,500 6 acres fine for Fruit, Poultry or Vegetables, 3 miles from Petaluma. Has good 4-room house, barn, 5 hen houses, good well water. Price $1,500.

$1,600 8 acres, 4-room house, barn, 3 hen houses, place is all fenced with wire netting. Wind mill and tank. Price $1,600; terms, one-half cash, balance in 3 years, 6% interest.

Petaluma Realty Company
801 Main St. Petaluma, Cal.

POTATO FUNGUS.

Small brown bodies not easily removed by washing often seen on potato tubers are caused by a fungus, Rhizoctonia or Corticium. As a rule they do not seem to cause much damage. But in Ohio a disease called "rosette," causing stunted growth and premature death of the potato plant, is ascribed to this fungus, and in Colorado a trouble called "little potatoes," is found associated with this fungus, which there also attacks the main stem of the plant near the surface of the ground.

The formalin treatment given for scab has been recommended for this; also the planting of clean, well-formed tubers.

California Horticulturally

By JOHN ISAAC, Sacramento, California

To Importers of Trees

IMPORTATIONS of nursery stock from the Eastern States are already beginning to arrive, and during the present planting season, extending over the next three months, there will probably be the heaviest importation of deciduous trees from outside points ever known in the history of California. This is largely due to the good prices which have prevailed for fruit during the past three years, the increase in the number of orchards, the cutting up of large tracts and the facilities afforded for getting to the Eastern market. So great has been the demand for nursery stock, that it has been impossible for our local nurseries to meet it, and as a result there has been a heavy call upon outside nurseries. While every encouragement should be offered to the planting of orchard trees in California, it should still be borne in mind that the reckless importation of fruit trees from different parts of the world in past years has been the great cause of introducing into our orchards all the insect pests and fungus and bacterial diseases with which we are now afflicted and which entails an annual cost of millions of dollars to our fruit growers to keep in check.

There are three very serious peach diseases in the Eastern States, which are highly contagious and which Professor M. B. Waite states are worse among the peach trees than is the pear blight with the pears, although this seems almost impossible as the pear blight is the most fatal disease we have ever had to contend with. There are very extensive areas in the East where the peach industry has been absolutely destroyed and where it is impossible to grow peaches owing to these diseases, the chief of which is the Peach Yellows, the next being the Peach Rosette, and third, Little Peaches.

Every effort has been made on the part of our State Horticultural Commission to prevent the importation of any trees from sections in which these diseases are prevalent, and it is the duty of our county horticultural commissioners to see that the law relating to the importation of nursery stock, fruit or vegetables, brought into the State shall have plainly and legibly marked thereon in a conspicuous manner and place the name and address of the owner, shipper or person forwarding or shipping the same, and also the name, of the person, firm or corporation to whom the same is forwarded or shipped, and also the name of the country, State, or Territory where the contents were grown.

The horticultural commissioners should see to it that these requirements are complied with, or prevent the delivery of any outside stock which does not come up to the requirements of the law.

It may be well to state here the sections which are infested in order that our importers may be on their guard. The Peach yellows is found in New York, Massachusetts, Connecticut, Rhode Island, New Jersey, Delaware, Maryland, Pennsylvania, Virginia, Michigan, Indiana (northern section,' Illinois (southern portion,) Kentucky (eastern portion,) North Carolina, Arkansas and Tennessee (eastern portion.)

The Peach Rosette is known to exist in Missouri, Arkansas, South Carolina, Georgia and Kansas.

ENLIGHTENED SUPERVISORS

The supervisors of Santa Cruz county are to be congratulated as a body of broad-minded men, instanced by the liberal aid they have given to the chief industry of their county. The Pajaro valley has a world-wide reputation for its apples, but like all other sections of the State, it has suffered severely from various pests. For several years past, the supervisors have joined hands with the horticulturists of that county and made liberal appropriations to assist in the work of carrying on experiments for the control of these pests, and with such good results that the Pajaro valley apples are freer from worms and the trees are cleaner than those in any other part of the State. They have lately made an appropriation of $1000 to assist in the work of keeping an entomologist employed carrying on experiments, and they are broad-minded enough to realize that it is money well spent.

A PROMISING SEASON.

The present season has opened very auspiciously in Northern California. Heavy rains have fallen; the ground is in excellent condition; plows are running in all directions and farmers are rushing in their crops as rapidly as possible. The late rains, after thoroughly soaking the ground, have ceased, and given every opportunity for work. There have been no drying winds since, and all the moisture soaked into the soil. It is too early yet to predict what the season will be, but it has opened in excellent shape for the farmers in the northern part of the State and they are taking advantage of it.

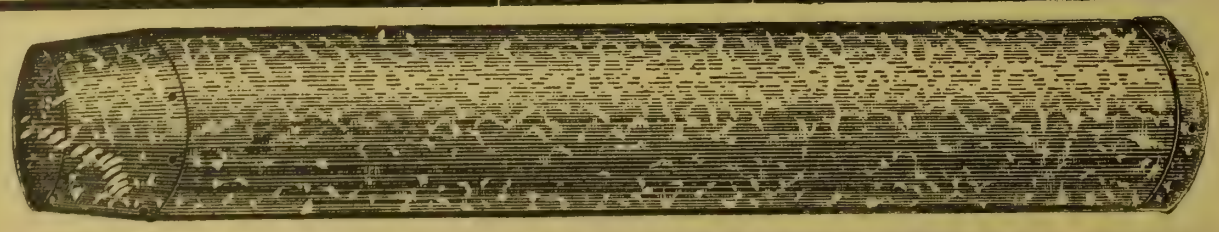
BENEFICIAL INSECTS.

George Compere, who has been on an expedition in search of beneficial insects for the State Horticultural Commission returned home from his tour on the Nippon Maru on the 17th inst. He brings with him a large number of different beneficial insects, among which there are two internal parasites, which he has found working on the Red Scale and the Purple Scale. These he secured in China and has cared for himself on the voyage home and arrived with them in good condition. They have been established in the State insectary, where they will be cared for and watched with much interest as to the outcome. It is sincerely to be hoped that this sending will develop parasites for both these formidable scales which will be thoroughly effective, and if they do not entirely eradicate the pests, at least keep them so far in check that they will not be regarded as serious.

Of course it is yet too early to predict what the out-come of this sending will be, as there are many contingencies to be met and overcome before on introduced insect is thoroughly established, but it is Mr. Compere's belief that he has secured a most effective check upon these scales.

BOOM IN DRIED FRUITS.

Holders of dried fruit this season have certainly no cause to complain of the matter of price. Markets have been active in all lines, and prunes and raisins have jumped up to a figure unequalled in many years past. The prune growers, who have sold for years at a close margin are especially jubilant, as they are reaping a small reward for their labors in the advanced prices they are receiving this season. The same is true of raisins which have advanced to a figure unequalled in many years. This condition is largely due to the great shortage of the European crop; the raisin crop of Spain being almost a failure, and the active demand for our fruit in the



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SAVES WATER, GRADING AND TIME

The ***only*** way to ***Irrigate Alfalfa.*** ***Cheaper*** than ***Flumes.*** This is only ***one*** of our ***specialties.*** We make ***Riveted Water Pipe*** in lengths of ***Ten Feet*** from ***Single Sheets.*** Let us ***prove*** to you that we make ***Pipe*** and ***Tanks Right.*** WRITE FOR CATALOGUE.

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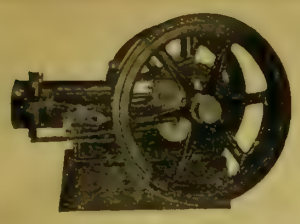

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Best Vapor or Gas Engine
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Best Vapor or Gas Engine
Best Vapor or Gas Engine Hoist
Best Irrigation Plant

"Western" Gas Engines and Hoists

Sold on a Guarantee of the Lowest Fuel Consumption

Patented Vaporizer especially designed for, and in successful operation with, California No. 2 distillate or alcohol.

Western Gas Engine Co.

908-932 No. Main St., Los Angeles
Third and Washington Sts., Oakland
927 L St., Fresno, Cal.
S. C. Smith, Goldfield, Nevada

Write for New 64-Page Catalogue, containing full particulars and much valuable information. Mention the "Cultivator."

outside markets. All along the line, fruits have brought better figures during the past year than usual. Peaches, pears and apricots have brought remarkably good prices, but, as usual, when prices are high, crops have been somewhat below the normal. However, on the whole, fruit growers have no cause to complain of the past year.

WEALTH IN IRRIGATION.

There is probably no country in the civilized world where the value of water is more thoroughly esteemed than in California. This is true because the rainfall is not over plentiful, often short, which makes water difficult and expensive to get.

The wonderful changes wrought in the state in the last few years and the growth of values both real and personal are due to the introduction of comprehensive methods of irrigation and conservation of water. Intelligent observation has done much to determine the methods which, when practically applied, have brought into use thousands of acres of land heretofore without special value.

It is claimed that the great San Joaquin valley in Central California is equally rich in natural resources and has besides in the Sacramento river a limitless water supply to irrigate millions of acres.

Yet, because the San Joaquin has rainfall, no irrigation has been developed and the land is planted to vast fields of wheat, resulting in an entire lack of settlement of the valley, whereas the region around Los Angeles, having much less rainfall, has become thickly settled with a prosperous energetic class of people who are making it one of the most wonderful regions of the United States.

Los Angeles is simply an instance of where adverse conditions have actually forced development. This is often possible where the active factor of development is the pushing, aggressive American. Under the old Spanish regime, Southern California would be today where she was at the time of the Mexican conquest.

All this good coming out of supposed evil or misfortune can be seen in a still different phase in this same locality.

Giving up in despair the idea of getting enough water out of the mountains, the ranchers commenced boring and pumping tests to try and save their orchards.

The result has been a marvelous underground water development everlasting in supply and easily controlled. Twelve thousand acres of oranges at Riverside are irrigated from underground waters. Water was found in many places where it has been said there could be no water.

The orange orchards of California begin to bear if well cared for, at four years from transplanting. When they are 12 years old they may bear 300 boxes of oranges to the acre, which will likely net the grower $300, and if his orchard is well located and not subject to frost, he will probably hold it at $2,000 an acre. An enormous figure, yet warranted by the returns. But on the other hand many acres, through mismanagement and poor location, barely return expenses. The soil of California is rich and this fact, it seems, is not proving an unmixed blessing to the people.

They have not apparently given exhaustive study to the fertilizing question. Many of the old orchards are not producing as vigorously as the smaller trees where the soil has not been depleted. The growers do not seem to expect so much of an old tree.

As a matter of fact, age should be no bar to an increasing yield until the orange attains its full growth and the foliage interlocks in the rows.

In Florida the growers apparently understand feeding the trees better, and, again, for the same reason that has in general built up California. The Florida orange grower has no soil, so to speak. He plants his trees in almost pure sand, and so has had to make a close study of supplying them with food from the start.

In a crop so intensive and valuable as the orange or lemon, the question of the cost of fertilizer does not really enter. Half a ton to the acre is a large application in California. A ton to the acre is not unusual in Florida.

Irrigation begets good cultivation. The old way was to flood on the water, after it had sunk into the ground run the cultivator over lightly and then in a short time irrigate again. This left the roots at the surface and necessitated the use of much water. Now better results are obtained by three, four or five good soakings, followed by a deep and continual stirring of the soil.

Southern Chief DISC PLOWS

MOLINE PLOWS AND OTHER FLYING DUTCHMAN FARM TOOLS

Built with Special Reference to the Requirements :: of PACIFIC COAST Farmers and Orchardists ::

These plows are made entirely of steel, malleable and cast iron. They are well braced, strong and easily controlled. The three disc can be converted into a two disc, and the four disc is easily changed into a two or three disc. A farmer having a two disc can make a three disc by securing the extra parts.

LEVER RODS SLIDE THROUGH ADJUSTABLE CONNECTIONS

Keeping the Levers and Operator Always in the Same Relative Positions.

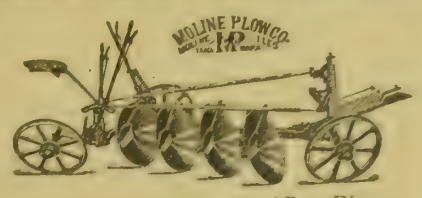
The location of seat, wheels and hitch are right, giving good penetrating power and permitting of turning to either right or left. The front wheel is under control at all times and the plow can be steered at will.

The Orchard Axle Attachment

with which either size of these plows can be equipped is a splendid thing for orchard plowing, and especially where it is desirable to work up under the branches close to the trees.

Permits of Closer Work than Can be Done with a Walking Plow

The plow with this attachment can be used for general work as well as for orchard plowing.



Made in Two, Three and Four Disc

SIMPLE WITHOUT SACRIFICE OF STRENGTH, AND THE QUALITY OF WORK CANNOT BE EXCELLED BY ANY DISC PLOW AT ANY PRICE

All levers are convenient for the operator, easy to control in raising or lowering plow and for guiding purposes. The bearings are long and made of chilled cast iron, insuring wearing qualities. The foot trip for rear wheel permits the plow to turn either way, and also serves as a raising lever. The method of raising and lowering front furrow wheel is sure to be a source of delight to the operator. It does away with the inconvenient lever in general use, which is usually too long on a two disc and too short on a three disc. The elacticity of the spring board hitch relieves the plow of dead shock and severe strain.

ASK YOUR DEALER TO SHOW YOU THESE PLOWS

Send us your name and address, enclose four cents in stamps to pay postage and mailing, and we will send you our Flying Dutchman Song Book and Junior Catalogue Combined, containing Twenty-six Old Familiar Songs with words and music.

MOLINE PLOW CO., MOLINE, ILL.

Makers of the Famous Moline Plows and Other Flying Dutchman Farm Tools, Mandt Wagons and Bob Sleighs, Light Running National Manure Spreader and Henney Buggies

Morse seeds sprout—you and nature do the rest.

PLANT SEEDS NOW FOR

Winter Vegetables

Five regular five-cent, and one regular ten-cent packet for . . **25c**

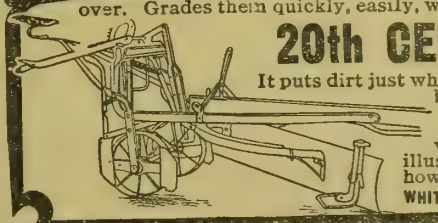
Send your name and address and the names and addresses of your friends—to receive a copy of our new seed catalogue — ready for mailing in December.

1—5c pkt. Lettuce, **Big Boston**, the best winter variety.
1—5c pkt. Radish, **Long Scarlet**, the best quick growing table variety.
1—5c pkt. Spinach, **Savoy Leaved**, the best variety for winter greens.
1—5c pkt. Onion, **White Bermuda**, the quickest growing and mildest flavored, both for greens and ripe onions.
1—5c pkt. Parsley, **Moss Curled**, the best for soups and garnishing.
1—10c pkt. Peas, **American Wonder**, the early sweet wrinkled variety.

171 Clay St. **C. C. MORSE & CO.** San Francisco

HOW MUD ROADS MAKE GOOD ROADS

Level those mud heaps, raise up the center, make the rain drain off to the sides instead of soaking in. Then your clayey, nasty roads will be smooth and pleasant to haul over. Grades them quickly, easily, with a



20th CENTURY GRADER

It puts dirt just where needed. Easily guided and handled by one man, simple to understand. Reversible either way to 50 degrees. Made of steel; strong, rigid. Very popular with cities and townships. Our free new illustrated book "Delightful Roads" tells how to make them. Send for it now.

WHITE CITY GRADER CO., BOX D, WHITE CITY, KAN.

HAWKS AND OWLS.

Though in poor standing with the farmer, hawks, owls and other carnivorus birds and animals are not altogether bad, and if they were given the credit they deserve, the good they do would overbalance the harm. In Scotland, some years ago, when war was waged against the hawks and owls because it was thought they were destroying the young pheasants, the damage done by small pests, which had theretofore been destroyed by these birds was far greater than that done among the pheasants. So, too, in Pennsylvania. After the legislature had offered a bounty for a few years on hawks and owls, meadow mice became so numerous and destructive that the law was repealed, and hawks and owls were heartily welcomed.

There is no green vegetation that is not acceptable to the meadow mouse, and when it is considered that they require from 24 to 26 pounds of green vegetation each for a year's support, and that they breed from four to six times a year, with an average litter of six, the damage they might do may be, in a measure, realized.

The progeny of one pair of field mice would in five years number two millions, and this is only prevented by the birds and animals which prey upon them, among which are the owl, hawk, butcher bird, and the wolf, fox, coon, opossum, mink, skunk and weasel. Of course, the chicken-stealing birds and animals must be dealt with summarily when caught in the act, but the chickens are seldom attacked if other food is more easily obtainable.

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Highest Awards in California State Fair and Arizona Territorial Fair. Write for Catalogue.

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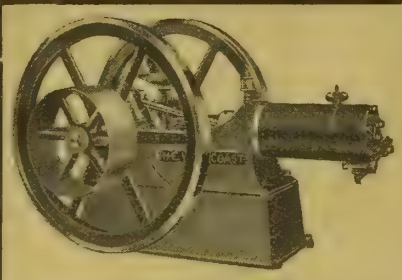

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That are right in construction and price. Estimates furnished on complete plants installed. references given on application. Call or write for catalogue.

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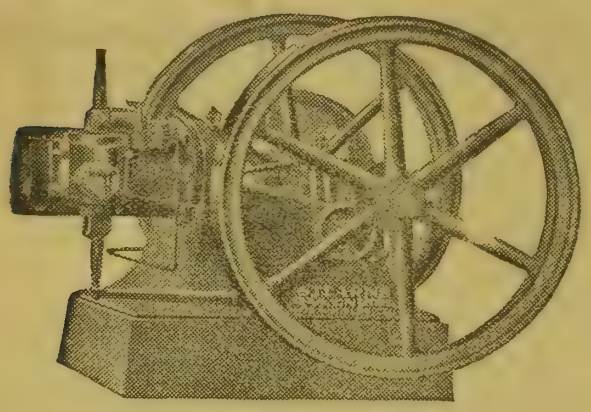

Has many points superior to any other engine.

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Every One Satisfactory

Built for California cheap fuel.

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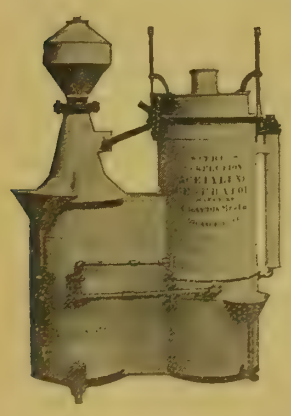

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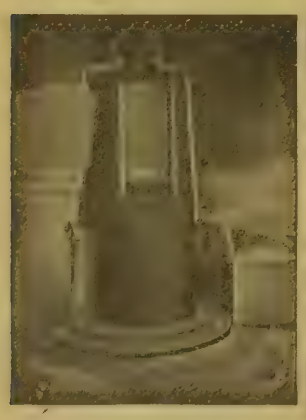

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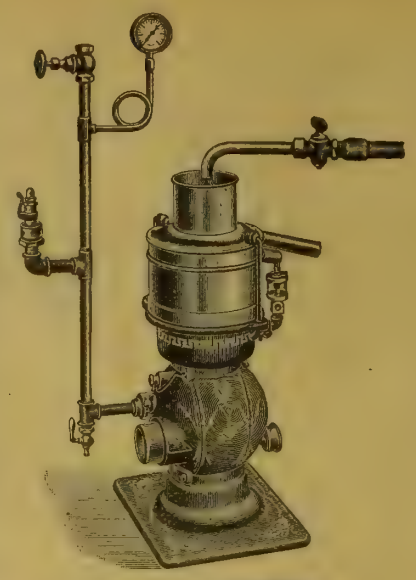

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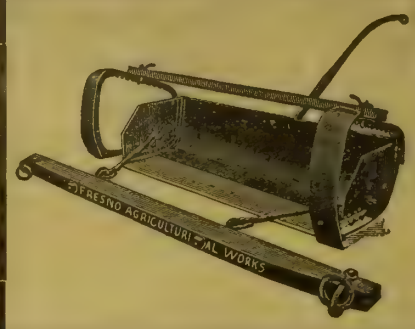

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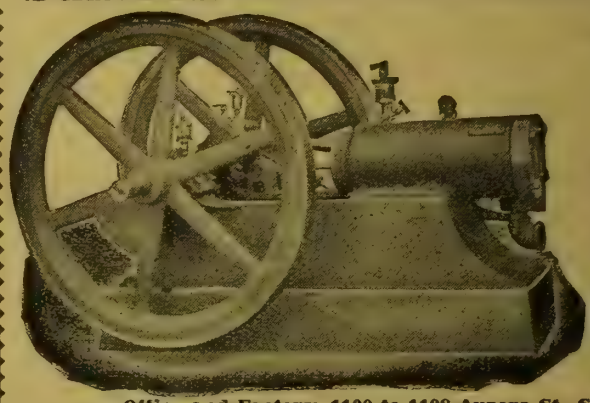

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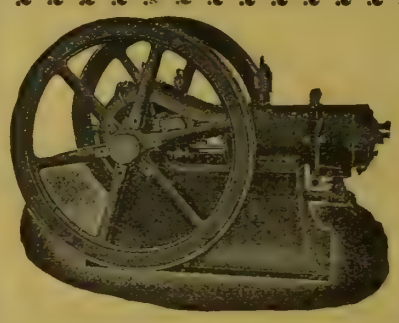

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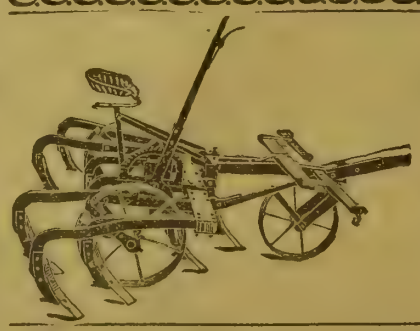

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California Cultivator

Los Angeles January 10 1907 San Francisco

The Latest Thing in Muskmelons

A New Esculent of Great Promise, Which Bids Fair to Rival the Best We Now Grow, for Either Home Consumption or Shipping Purposes

A NEW MUSKMELON, quite unlike any of the types heretofore known, was brought to the Cultivator office one day last week, and quickly disappeared, we know not where, though the entire office force stated "it is the best we ever tasted."

The specimen in question was picked in October, but owing to its having a hard shell, not unlike that of the Hubbard squash, it was in a perfect state of preservation; and would undoubtedly have kept in good condition for a long time had it not unfortunately (for it) drifted into Cultivator headquarters. This shell, hard as it is, is in no melon examined so much as a quarter of an inch in thickness.

Another equally curious fact, as equally unknown in the melon family, is that this stranger has no seed cavity, the seeds being embedded in the pulp, a fact readily demonstrated in our illustrations.

The flesh is a light yellowish green in color, very fine and jelly-like in texture, with no fiber at all and having a most delicious flavor, and when cut it sends forth a most satisfying fragrance, more welcome than that of any cantaloupe.

Owing to its many excellent points of superiority, we believe this melon is to occupy a wide field, and that with careful management it may be marketed over as long a period as is possible with the hard-shelled squash of the Hubbard section of the family.

The New Melon
Notice the thickness of the flesh from end to end.

It will be especially useful as a late fall melon, long after the casabas "are faded and gone."

Its firm shell suggests that it might be shipped to any part of the United States, or in fact to any point where our oranges will with safety carry. What a delightful fruit it would prove to the proper complement of an Eastern Christmas dinner, where the table was already decorated with California oranges, celery, etc.

The grower gives the following directions regarding the successful growth of the new and unnamed melon.

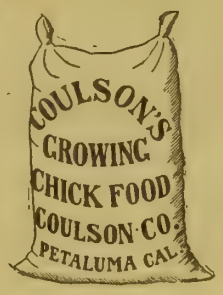
The New Muskmelon

Plant in April or May. Cultivate as other muskmelons, but do not water too generously after first setting of melons is fully grown. Do not pick until the light streaks have become quite yellow. Pick in September or October. They will keep from from three to six months. When stored away these melons become very fragrant, and the rind eventually becomes slightly softened and moist. Then they are ready to eat.

A firm of fruit shippers of Los Angeles says of it: "We need a good muskmelon that can be shipped to the Eastern market for the holiday trade. The casaba hardly answers the purpose, for because of its soft rind it will not carry. Judging by the appearance, the excellent flavor and many other good points, this new melon is just the one the shippers have long wished for. We will handle it just as soon as any can be procured, and predict for it a popular reception."

Another muskmelon that bids fair to make a name for itself is the so-called "rust-resistant cantaloupe" which has been developed in Colorado and will be extensively experimented with during the coming season. In tracing back the history of this strain of seed it was found that some years before a seedsman had saved the first from a single healthy melon taken from a field of rusted vines. It was developed by the simple process of saving the seed from the best melons produced by plants which withstood attacks of rust when surrounding plants were destroyed by the disease. Who knows but the one above illustrated may also prove impervious to attacks from fungous diseases.

The New Melon
Note absence of seed cavity.



Coulson's Growing Chick Food

Is a mash feed for the growing chicks, designed for feeding when you leave off feeding Coulson's Special Dry Chick Food, composed of articles, each the best in its class, combined in the correct proportion to form

A PERFECT BALANCED RATION

It contains blood meal, meat meal, bone meal, and other articles rich in protein, and the other elements, and is the feed you need to make your chicks excel in size and weight and enable them to become strong, vigorous and heavy-laying fowls.

COULSON'S GROWING CHICK FOOD WINS OUT

San Marcos, Cal, July, 23, 1906.
Gentlemen:

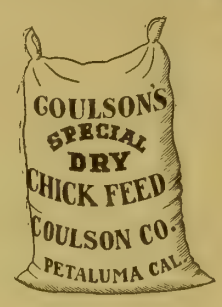
I tried COULSON'S GROWING CHICK FOOD exclusively my first year in business on Brown Leghorns. I sold the cockerels as broilers at nine weeks, averaging 2 pounds, 3 oz. each.

I tried my own mixture of feed the next year and took the same care of the chicks, and sold 75 cockerels as broilers, weighing 105 pounds, making an average of about 1 1-4 pounds each.

Having tested at my own expense the two methods I have concluded that COULSON'S FOOD is superior.

(Signed) J. B. HOOVER.

USE COULSON'S AND BE SATISFIED



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Is acknowledged by all The Best and most Reliable Feed for Baby Chicks.

COSTS LESS THAN 2 CTS. FOR FIRST FOUR WEEKS

ONLY HIGHEST QUALITY GRAINS, ETC,, USED

Special Dry Chick Food contains numerous different seeds adapted to needs of the little chicks, besides meal, charcoal, bone and many other necessary articles, each in Granulated form making

A PERFECT BALANCED RATION

CANNOT PRAISE IT ENOUGH

"I cannot say enough in writing in praise of your Special Chick Food. It is just fine. I never saw chicks do so well before."

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PULLETS LAY EARLY

"I have fed your Special Chick Food and Growing Chick Food to all my stock with one exception. I tried one lot of 350, and fed them my way of raising chicks back East. Results just fair. The other were fed up to three months on your Special Chick Feed, and the results were a surprise to me. The birds were large and the cockerels out of one lot I sold to the California Market and got a big price, with the request to send on to them at any time I had more cockerels of the same quality."

Respectfully, A. P. WARD,
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1907 MODEL

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OLD TRUSTY 124-page catalog, 250 photo pictures of interesting poultry scenes, special price list and our guarantee and free trial offer. Just send your name today. Our prices are lower by dollars than any other company. **Why Not Save $10 to $15 on an Incubator?** It can be done. Our price list proves it. Think of it? A hot water Incubator, genuine 16 oz. cold rolled copper tanks, selected redwood lumber, double top and bottom, double walls, double doors, best lamp and regulator made. Catalog tells all about it. How can a machine be worth $7 to $10 more? Better send today and save money. Special prices this month. **Agents Wanted.**

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Stockton Incubator Company
G. S. Marshall, Prop. *Stockton, Cal.*

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6 Ribbons on Entries at San Jose Show, December, '06

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Special figures in lots. These birds will not last long. Buy at once. One pair of Buff Rocks for $5.00. A bargain in a yard of Buff Orpingtons. ***Eggs*** from the above varieties at from ***$1.00*** to ***$3.00*** per setting of 15 eggs. A few Bronze Turkey Hens and Gobblers at $3.50 to $7.50 each.

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California Cultivator

Vol. XXVIII—No. 2 Los Angeles, California, Thursday January 10 1907 Subscription $1 a Year

Agricultural Education in California

An Essay Read in the Regular Order of Class Work at the California Polytechnic School, San Luis Obispo

By H. F. TOUT

IN THIS age of "doing things," this age when the hand as well as the brain must be trained, it is necessary that educational methods should be established whereby the greatest proficiency can be attained in what ever course of study the individual may choose.

Industrial education is the equal balancing of art and science. By "science" we mean the understanding of "why" certain things take place, while by "art" we mean the knowing of how to put these scientific principles into practice.

I shall deal particularly with industrial education and its relation to agriculture. I do this because the agricultural course has been my selected work, and I can better appreciate the many needs for improvement along all lines of agricultural pursuits.

The present educational system deals almost exclusively with mental and moral training. Industrial education demands that more time shall be devoted to the training of the hand. A verbal exposition upon any subject, no matter how complete it may be, fails to create in the mind of the reader, mental pictures as clear and complete as results obtained from personal work and observation. To illustrate my point: a student reads a graphic description of how a bee, in striving to obtain the honey from some common flower, brushes past the pistil of this flower. In so doing the bee deposits pollen upon the pistil. Upon leaving this flower in search of more honey, the bee carries the pollen from the last flower visited. By this wise provision of nature, that particular species of plant continues to live. Here is the point. That individual may receive no stimulus to investigate the subject from the mere reading of that exposition. But once establish a system of school work whereby the instructor may control the "physical activities directed to useful ends" and compel this student to visit nature's garden and investigate that printed story, then at once a desire is created for further research.

Another illustration of the utility of industrial education. The most accomplished blacksmith may lecture to you for a week upon the principles of blacksmithing. He may explain just how to "upset" the ends of the iron to get the best weld. He may tell you just what the welding heat is, its color, the behavier of the iron, and all the other details, yet I'll wager that not one in this building can make the iron "stick" the first trial. You may have the science of blacksmithing perfectly established in your mind, but with all this knowledge, without the art, you will be a failure as a blacksmith.

In establishing a system of industrial education, a perfect balance must be attained between the mental and the physical training, for until the automatic stage is reached, the workings of the hands are governed by the active operations of the mind. The training of the hand should not be all of the education for any calling. Up to the present time, the work in the schools of rural communities has been lacking in the elements of industrial training. The chief aim has been to acquire mental training and knowledge from books. The use of pencil and pen furnish about the only illustration of "doing" requiring the use of the hand as our educational systems now stand.

To say concisely what I mean, we should introduce into our present school system, commencing with the year, a line of work whereby the hand as well as the mind may be trained. The very first primary elements of agriculture should find a place during these early years of school life.

It may be argued that it is not the business of the common schools to train mechanics, nor to train farmers. It is the duty of the common schools to so train those attending them that they may be more effective and resourceful in whatever line of work they may enter. Nearly one-half of the children in the United States who are in the public schools are enrolled in the rural schools. Ninety-five out of every hundred never attend any other than the district school. The farmer boy and girl is surely entitled to something better than they get. It is time to recognize the fact that a system of rural schools should be planned whereby its course of instruction will fit the needs of the 95 per cent. of pupils who never go beyond the grammar school.

Time will not permit me to go into a thorough discussion of the subjects that should be taught in this newer system of education. I can but mention a few. Commencing with the third year and continuing until the fifth, nature study could be introduced. Under this topic would come, for example, a thorough study of the leaf, its form, shape, color, peculiar position on the stem, and the reason for the same; the different shaped trees, why some are evergreens and others are not. When spring comes the study of flowers as to color, shape, size, odor, and the reason for these. A great multitude of subjects are ever present for nature study. The primary readers could have interesting stories of birds in their natural habitat. Stories of domestic animals and many similar topics could be introduced. After the fifth year, teach something of the nature of the soil and the correct fertilizers to use on particular soils. The treatment of the simpler plant and animal diseases should find a place. Many of these subjects that I have proposed could be introduced into the reading courses and dispense with the present readers.

There has never been a time in the history of this country when arguments for industrial education in rural communities could be presented with such great force as at the present time. Competition is no longer confined to the commercial world. The farmer finds himself face to face with problems of competition as never before.

The government report for 1903 says "that all lands susceptible of cultivation in their natural condition have been taken up, so that this outlet for our growing population is closed. There are, however, vast areas of land which when drained or irrigated can be cultivated." It seems to me, therefore, that somewhere in the farm boy's education he should receive some training in the construction and maintenance of irrigation ditches and reservoirs and the proper surveying out of drains systems.

We have a very notable example in our own State of defective secondary education in the case of the Fresno High School, a school of over 400 students. The colonies south and west of Fresno have become famous as horticultural districts which have been ruined by improper irrigation. The water has risen within three feet of the surface of the ground because of improper drainage and excessive use of water. As a consequence, vineyards, orchards, and alfalfa fields are dying. Boys from these drowned farms attend the High School for four years. There they study Latin, Greek, classics, myths, Greek, Roman, medieval and modern history, and many other nice things to know. The fact remains that less than 5 per cent. of the High School graduates in the United States ever go on to the universities. Hence, 95 out of every 100 of these boys return to the already drowned farms, run more water, foolishly endeavoring to make the poor yellow-leaved vines and trees grow. It is too bad that never in that long four years of hard study the principles of irrigation and drainage have found no place. With a few dollars invested in drainage systems, those now almost worthless farms could be redeemed. But the agricultural department of the State University or the California Polytechnic School are the only places at present in this vast irrigated State where such principles are taught.

A man that would open a machine shop without previous education and training would be a failure. For the same reason many farmers are failures.

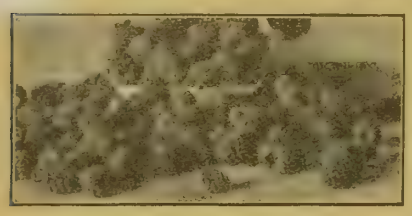
The attitude of uneducated farmers is a potent factor in retarding the growth of agricultural education. One of our dairymen here, who had lost heavily because of tuberculosis in his herd, was asked to attend Dr. Ward's lecture on that particular subject. He refused to go, replying, "No, I won't go. I know enough about those durned bugs already." See the attitude. In fact, he did not know the first principle about the disease, for it is not caused by a bug at all, but by a minute plant.

Two years ago a vineyardist with whom I am personally acquainted, had his vineyard seriously ravaged by bugs, those that suck the sap from the leaves. He had read that sulphur dusted on the vines would prevent fungus diseases. At once the forty acres of vines were thoroughly sulphured. The bugs sucked just the same. Upon their departure the army worms laid siege. He sulphured again. The worms chewed away and seemed to grow greener upon the sulphur. Now, almost every one knows that powdered sulphur has no poisonous effects. I have eaten sulphur and sugar many times when I was a boy. Some claimed that it had great virtue as a blood purifier. One thing I do know. It does not possess much virtue as to flavor. But here is the point. That vineyardist did not know the first principles about controlling insect troubles. Had he been taught these simpler truths during his early school life, no such foolish moves would have happened.

I could give you many more examples of lack of training among farmers, but you can see them

Continued on page 46

NEWBERT'S PHENOMENAL BERRIES



The most up-to-date berry on the market. They will clear you more money to the acre than any other berry you can grow. $750 clear profit has been made from one acre of these berries. The market price has been from 75c to $1.50 per crate of 16 half-pound baskets. I have taken ripe berries from my vines by the first of May.

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My plants are rooted from the tips, and will make you a strong and fast-growing vine. Order at once to ensure delivery.

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To get actual size of the "Phenomenal" measure 2 inches lengthwise and 1 inch in width, then draw a circle around the points.

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Signal Hill Advance Dewberry

A wonder in earliness, wonderfully prolific, consequently most satisfactory as to profitableness. First berries marketed last year in March brought 35 cents per box and from that down to 8 cents at the beginning of the ordinary Dewberry season.

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Per Dozen, $ 1.50
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Gray's Gardena Dewberry
Per Hundred, $ 1.50
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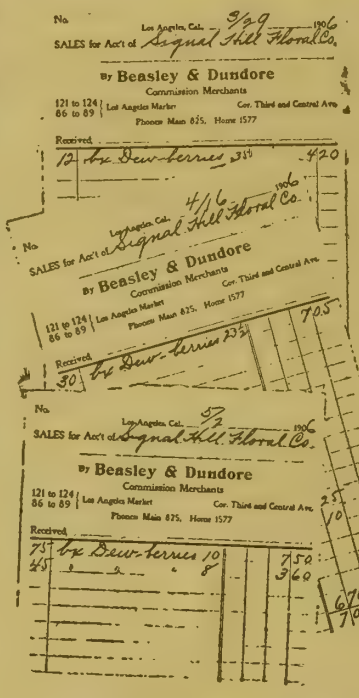
Signal Hill Berry Farm
349 So. Los Angeles St., Los Angeles, Cal.


Los Angeles, Cal. 3/29 1906
SALES for Acc't of Signal Hill Floral Co.
By Beasley & Dundore
Commission Merchants
121 to 124 / 86 to 89 Los Angeles Market
Cor. Third and Central Ave.
Phones Main 625, Home 1577
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4/6 1906
Signal Hill Floral Co.
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Proof of the profit it brings in the credit slips of commission houses returned to Mr. Meserve last spring.

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order direct.
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Accept no substitute; insist on having "MOCOCO"

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Deciduous Fruit Culture

By J. W. MILLS

French Prunes

THE increased profits derived from prunes during the past two years have stimulated interest in the fruit again and some of those who cut out their trees now wish they had them back again. The increased interest in the prune, brings many inquiries from numerous prospective planters. The best variety and etc., are old items to the average California prune grower. We one time admired the enthusiasm of a man newly from the East, who had bought a small farm on which were a few French prune trees. When his prunes were ripe, he brought us a sample and asked us of we ever tasted such a sweet and delicious prune as that sample. It was an ordinary, rather poor grade of prune, grown on very poor prune land. It is this class of new farmers that want to know about prunes.

The principle prunes grown in California are the Prune de Sargent and Prune d'Agen, the leading French prunes of commerce. They form the great bulk of prunes raised in France also. The Imperial prune is also raised quite extensively in Central California, but the bulk of the orchards are the older orchards of the two first named varieties.

Imperial prune makes fancy goods, which bring the top prices, but the trees are not so productive as Robe de Sargent and d'Aden. It is not a profitable prune in Southern California as the tree is a very shy bearer there. Splendor has the same fault besides being smaller in size than the ordinary prune. In the Sacramento valley, Splendor will break the trees down if not propped.

Sugar Prune promised to be a winner, but Imperial leads it now and no doubt always will as a cured prune fruit. It is a hard tree to manage as it is extremely brittle and the fruit is exceedingly susceptible to cracking in some localities. It is a very slow grower compared with other varieties in some sections and is very much of a disappointment in such places. It is one of those examples where strict attention to the adapability of varieties to section is imperative. This is always an important item to consider, but in the case of Sugar and Splendor prunes, it is doubly so.

PLANTING THE PRUNES.

Wickson advocated some years ago, that prune trees should be planted with the entire top left on, instead of cutting it like other trees usually are at planting time. The old way was to cut all the newly planted trees at one height, which forced out a cluster of branches near the top. This makes a handsome tree for several years, but when the tree arrives at the advanced bearing age, few will carry a load without splitting. It is hard to estimate the amount of damage that has been done through the mistaken idea that the prune should be cut back to eighteen or twenty inches. Wickson's method gives the tree a chance to send out branches in natural positions and at such angles as will make a strong fork.

The French prune does best on peach root when planted on deep soil that has good drainage. When planted on soil that is subject to standing water or where the drainage is poor, use Myrobalan roots.

The usual methods used in preparing land for orchard purposes as has been described recently in these columns, applies to the prune orchard. Trim the roots on the ends where they have been bruised when taken from the nursery. Have the holes large enough to accomodate the roots well spread out. This method is superior to the Stringfield system in this State. Do not pinch back the new growth on the trees during the first summer's growth. The young trees may look ungainly, but the open spaces will fill up and nipping the ends of the strongest growing branches of any young tree will retard its growth. We have experimented on that point to our entire satisfaction. Ever ounce of sap that runs through the branches of a tree, will increase the size of the trunk that much more, and when you commence to check the full flow of sap that the strongest branches induce, just so much is lost in the stockiness of the tree.

THE MISSION OLIVE.

The Introducer.

Historic records tell us that the olive tree was introduced into California in 1769, from San Blas, Mexico, by an expedition of Franciscans sent to take charge of the Jesuit missions in California.

It appears from the ship's manifest that one José de Galvez, who was "Visitor-General" and secular head, with Father Serra, proceeded to make arrangements for the establishment of settlements. He seemed to be farseeing, for it was found that he had caused to be shipped to "Alta" California, flower, vegetable, and fruit seeds for garden and orchard, and grain for the field. The ship's manifest does not show that any trees or cuttings were brought.

The First Planting.

The first seeds of the olive are said to have been planted at the Mission San Diego, and those seeds (which Galvez had been so provedent in sending) grew and prospered. The Fathers built new missions, and among the first trees planted was the olive, grown from cuttings taken from trees of the San Diego mission.

All the mission orchards were very small, and some had but few trees, but those trees played an important part in the horticultural history of our State, for they laid the foundation of a gigantic indrusty and furnished stocks for many groves, which today may be styled the "prehistoric" orchards of the State.

Many Types.

For many years, a century or more, only one variety of olive, the "Mission," so called from its having been first grown at the various historic missions, was known in the State. Many of those trees still live and bear remunerative crops under favorable conditions. That the larger part of these primitive trees were grown from seed there is but little doubt, for in almost every mission olive orchard there are trees growing side by side of entirely distinct types.

Some are of a willowy habit, the fruit large and roundish, which matures

Continued on Page 33.

TREES

True to Name

The demand for all sorts of fruit trees promises to be heavier than ever before. Place your order now, before our assortment is exhausted.

Deciduous Fruit Trees

We have this season a superior stock of

PEACHES PLUMS
PRUNES PEARS
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All grown under our personal supervision in our Nursery Plant No. 3, which has a rich river bottom soil, permitting the most perfect roots.

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All grown at our Citrus Nurseries in the Great Thermal Belt near Exeter.

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ALMONDS WALNUTS
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In all the leading varieties.

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On their own roots and grafted on Phylloxera resistant roots. All the leading Table, Wine and Raisin sorts.

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With the Citrus Growers

By J. W. MILLS

Light Pruning

REGULAR pruning in the orange orchard should be done right after the fruit is cleaned up. In the case of Valencias, this comes after the new crop is nearly grown. Some green fruit is bound to be sacrificed, no matter when it is done even with navel trees. A large grower in Orange county leaves a few empty boxes scattered through his orchard after the picking, and his pruners follow with picking bag. Every tree is carefully gone over and the stray oranges that even the most careful pickers overlook, are gathered and put in the boxes. This often greatly reduces the cost of pruning as it comes during the season of high prices that this work is done.

The pruning of bearing trees that are in good condition should be confined to cutting out branches and twigs that are on the wane. Such branches are often tipped with a few healthy leaves, but when they are down in the center of the tree they cannot long survive. When the outer branches are open enough to admit a little sunshine, these small branches will bear some fruit of fine quality. On the other hand, if a tree is too open, especially a navel tree, the fruit will be lighter in color. There is a balance to be struck that can only come with experience. This feature does not enter so largely into the Valencia as it is naturally a lighter colored orange. Then again soils have a great deal to do with the color of oranges, independent of pruning.

The pruning of frosted young growth on young trees and buds need not now be pruned as the frosts that are to follow will no doubt kill them some more. At the end of the cold season, all affected growth should be cut back below the seared point. Such wood may start new branches, but the growth will be slow and more is gained by getting down to strong buds.

INFLUENCE OF SOIL ON COLOR.

Last year we had occasion to note that part of one orchard that produced a magnificent crop of oranges, as smooth as any Thompson's Improved, but with a thinned skin, fine textured pulp, full of juice and heavy, could not turn out two per cent. of fancy fruit on account of color. A part of the same orchard produced more fancy fruit, but not so fine in texture. The difference was apparently due entirely to the soil. The light colored fruit was on soil that was over fifty per cent. gravel. The higher colored fruit in the same rows was on soil with some clay and less gravel.

One striking feature that knocked some pet theories regarding the cause of puffing and splitting, was in evidence in this orchard. Thin rinds on an orange are supposed to be more liable to split than a heavier rind, and that splitting and puffing of the orange are due to two distinct causes and are results of causes due to diametrically different forces and attributes. In this same orchard we found thick skinned oranges that were puffy. Near by and in the same row were the thin-rind oranges that were puffy and across the puffy parts were cracks, showing that it was not due to a tight skin.

There is more in the feed than the breed.—Exchange.

And more in the feeder than in either.—Kansas Farmer.

CITRUS CULTURE.

The culture of citrus fruits has become the leading industry of many districts of California, and it is being developed with surprising skill and energy by very capable horticulturists, some of whom have been almost a lifetime in this occupation. It is therefore essential to the truthfulness of any inquiry into the present problems of citrus-fruit culture that a wide range of observation should be taken.

M. J. W. Mills, foreman of the Pomona substation since 1893, and now at Riverside, was therefore sent out, in 1902, to visit some of the best orchards in leading orange districts of Los Angeles, San Bernardino, and Riverside counties, and to compare the staton experience with that of successful commercial growers. The results possess interest for those who wish to plant citrus fruits in any part of California, since the conditions of soil and climate at Cloverdale, Calistoga, Palermo, Porterville, and other northern and central orange-growing points, while in some respects quite different from those of the southern orange-growing counties, are sufficiently similar to make careful observations in any part of California valuable. Much more complete studies of local conditions have been made in the southern citrus districts than in other parts of the State, and some of the conclusions reached need modification as respects northern districts when an equal amount of local experience shall have been there accumulated. Based on these studies and those of recent years, are all of Mr. Mill's writings in the Cultivator; which are invaluable to all citrus growers.

In citrus fruit districts the high price of land that is known to be well situated, of the best quality, and supplied with water, leads men to extend citrus culture far beyond its natural limits, upon unsuitable soils and into frosty localities. The marked recent advance in average prices of citrus fruits and of wellplanted orchards has also caused hasty and careless planting, even in well-established districts. Many old trees are bearing less satisfactory crops than heretofore, and various plant diseases add to the anxiety of the orchardists. Technical knowledge and a high degree of horticultural skill are every year more essential to the prosperity of each individual orange-grower.—Ed.

MANDARIN ORANGE HISTORY.

Several gaps occur in the history of these oranges, and yet it has been possible to trace it with a fair degree of accuracy. The first mention of an orange which is believed to belong to this group is in Sterbeeck's Citricultra, where it is mentioned as the "Muscat apple."

It is well within the limits of probability that some member or members of the group were known to Rumphius and indeed Lourerio, in his original description of Citrus nobilis in 1790, refers to this possibility. Referring to the the same dates and cuts, Bonavia comes to the conclusion that the Aurantium sinense of Rumphius must be grouped with the suntara oranges of India. Having carefully read the description written by Rumphius, both in the original and as translated by Bonavia, and after comparing it with specimens of the Rangpur lime, grown by

Continued on Page 41.

200% INCREASE

From The Los Angeles Times, Nov. 23, 1906:

"Truman Berry has just completed the picking of ***lemons*** from a four-acre East Whittier orchard, getting over 1200 field boxes from the four acres. This is considered something of a record, as the orchard was gone over thoroughly just one month ago. The average yield per acre is something like 100 field boxes for each picking, this being considered a good record. Berry's record is therefore ***three times the average yield*** and goes to show how California soil will repay careful and intelligent effort on the part of the rancher."

LEMONS

3 Times the Average Yield

Mr. Truman Berry ***Used***
A. C. W. Fertilizer

"FERTILIZERS FOR THE LANDS SAKE" A.C.W.

AGRICULTURAL CHEMICAL WORKS
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ALL ABOUT THE
Orange and Lemon

Is told in our new book on Citrus Culture, embracing every phase of the subject from the seedling bud to the final disposition of the fruit in the Eastern market. The largest and best book on the subject ever printed — 50,000 words, 100 illustrations. You will want a copy, which we will send you for the small sum of 25 cents. Remember we are the largest growers of orange and lemon trees in the world.

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SEE MINE, OR WRITE ME ABOUT YOUR CITRUS NEEDS. IT WILL PAY YOU.

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All Kinds of Stock. Order Grape Cuttings now. Send for Price List

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The Studebaker

No one ever claimed to make a better wagon than THE STUDEBAKER. It couldn't be done. Many are said to be "just as good." If none is claimed to be better by the competitors, and the Studebaker is looked up to as the standard, isn't it pretty good evidence that it is the best?

Every wagon put out by the Studebaker factory is as near perfect as it is possible to make it. Everything from tongue to tail-board is of matchless superiority.

Don't waste money on an inferior wagon, but begin right and get a STUDEBAKER. These wagons, in various sizes, may be seen at the large salesrooms of the

Newell Mathews Company
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EARLY LAMBS

Early lambs will bring big money if you save them, and get them to market at the right time. Give them a little of Dr. Hess Stock Food in the grain they eat—then, if you keep them warm and dry, there will be no losses, and they will be "fit" at the very moment when prices are best.

DR HESS STOCK FOOD ATONIC

the prescription of Dr. Hess (M. D., D. V. S.) contains bitter tonics for the digestion, iron for the blood, nitrates to expel poisonous material from the system and laxatives to regulate the bowels. These ingredients are recommended by Professors Winslow, Quitman, Finlay Dun, and the most noted medical writers in the country. It is not a food in itself, but makes all the food of the farm produce more milk, more meat and more work by increasing digestion and regulating the system generally.

Sold on a Written Guarantee.
100 lbs. $7.00
25 lb. pail $2.00
Smaller quantities at a slight advance.

Where Dr. Hess Stock Food differs in particular is in the dose—it's small and fed but twice a day, which proves it has the most digestive strength to the pound. Our Government recognizes Dr. Hess Stock Food as a medicinal tonic, and this paper is back of the guarantee.

If your dealer cannot supply you, we will.
DR HESS & CLARK, Ashland, Ohio.
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MOLINE PLOWS AND OTHER FLYING DUTCHMAN FARM TOOLS

Southern Chief DISC PLOWS

Built with Special Reference to the Requirements :: of PACIFIC COAST Farmers and Orchardists ::

These plows are made entirely of steel, malleable and cast iron. They are well braced, strong and easily controlled. The three disc can be converted into a two disc, and the four disc is easily changed into a two or three disc. A farmer having a two disc can make a three disc by securing the extra parts.

LEVER RODS SLIDE THROUGH ADJUSTABLE CONNECTIONS
Keeping the Levers and Operator Always in the Same Relative Positions.

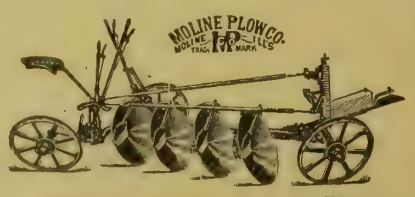
The location of seat, wheels and hitch are right, giving good penetrating power and permitting of turning to either right or left. The front wheel is under control at all times and the plow can be steered at will.

The Orchard Axle Attachment

with which either size of these plows can be equipped is a splendid thing for orchard plowing, and especially where it is desirable to work up under the branches close to the trees.

Permits of Closer Work than Can be Done with a Walking Plow

The plow with this attachment can be used for general work as well as for orchard plowing.



Made in Two, Three and Four Disc

SIMPLE WITHOUT SACRIFICE OF STRENGTH, AND THE QUALITY OF WORK CANNOT BE EXCELLED BY ANY DISC PLOW AT ANY PRICE

All levers are convenient for the operator, easy to control in raising or lowering plow and for guiding purposes. The bearings are long and made of chilled cast iron, insuring wearing qualities. The foot trip for rear wheel permits the plow to turn either way, and also serves as a raising lever. The method of raising and lowering front furrow wheel is sure to be a source of delight to the operator. It does away with the inconvenient lever in general use, which is usually too long on a two disc and too short on a three disc. The elacticity of the spring board hitch relieves the plow of dead shock and severe strain.

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Send us your name and address, enclose four cents in stamps to pay postage and mailing, and we will send you our Flying Dutchman Song Book and Junior Catalogue Combined, containing Twenty-six Old Familiar Songs with words and music.

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Live Stock and Dairy

By Mrs. Minna E. Sherman, Fresno, Cal.

Butter Making

A cows milk is fit to use after the ninth milking from calving time, to make it certain that the milk is not sold too early the ordinances of many cities reads that milk may be sold after the fifth day. Old country folks often regard the first milk as a delicacy, using it to make a form of custard. In America. it is used to clean out the bowels and start the gastric juices in the newly born calf. The newly born foundlings of the human family are often saved from death by the first milk from the cow half reduced with water. The horse breeders recognise that a colt which once nurses is born all right! and must be paid for by the owner. This is "old wives" talk. A newly fledged writer tells us that this first milk it filthy and that it is folly to use it for the newly born animal, that it is barbarous. I told Carl this, Carl has fed the cows for twenty years at the ranch. He said; "Did you read that in the paper? Well never mind; when people write for papers they is always folks that don't know nothing!" I meekly replied "Well that is too bad Charley!"

As soon as the milk is fit to use begin to make butter, if there are two cows, one fresh and one longer in milking, it will be found more ecomonical to use the milk from the cow longest in mlk, for the table, and set all the fresh cows milk for skimming. The loss is considerable if the two are mixed for under ordinary conditions the cream is not evenly ripened and the butter fat is lost in the butter milk. The fresh cows milk will cream more easily, as the milk is more fluid, often in the milk of cows not fresh, there seems to be an albumen that prevents butter fat seperating completely. When a separator is used practically all the fat is recovered, from milk of any class.

Keeping Milk Pure.

When the milk is set in open pans a special room free from odors should be used, if possible a room whose walls can be freely whitewashed. The room under the tank is often used for this purpose. The windows should have screens to keep out flies and also windows of glass to keep out the dust and rain. A large trough filled with water to stand the cream can in, as well as to use to chill the milk, is desirable. The changes of temperature act more slowly when the cream is held in water than when it stands in the open air. When dampness troubles the room a box of unslaked lime standing on the floor will remove the mouldy tainted smell from the air. By taking up the moisture the room is made sweet and wholesome.

While is may not be ecomonical for every one to have a seperator the woman who has only a house with a few people in it to look after and has time. I believe would find it to her advantage to have a separator. The point with me would be that of health. I believe it is rare that milk skimmed from pans is not placed in rooms the temperature of which must in a degree interfere with its purity. The small separators are not expensive and would last many years when used by careful hands. The daily washing of pans is no small task especially where a woman must heat all the water used on an ordinary stove. The separator gives a smooth sweet new cream that is vastly superior to the lumpy cream just turning sour from the pans. To any one used to separator cream the other is hard to use even in the coffee for breakfast, and not liked at all on fruit or mush.

Use Of Pans.

I suppose the use of pans will continue, as many women's time is not thought of value by their husbands and unfortunately the spending of the money earned by the man and saved by the woman is left to the husband. So the mowing machine is purchased and the separator is an extravagance.

The tin-ware, pans, cans, milking pails sometimes have rough places but not as often under the present machine soldering, still I always look them over carefully, then weigh them, make the cans all of the same weight by dotting them on bottom with solder. Have the milk pails done in the same way so that weighing once settles the accounts. When any can is full of milk the same tare is to be allowed on each, This is to simplify keeping the amount of milk it will hold without having to weigh it each time.

The use of soap and cloths for wiping milk utensils is all wrong, throw them out the windows to make fertilizers, for to each of these are to be traced many of taints in the milk. The virtue of soap and soap powders seem now to excercise the minds of the men instead of preservatives. The basis is after all sal soda or borax, these are cheap when bought in themselves, but when a fancy cartoon printed in red green or blue is added, the price becomes even higher than the coloring of the wrappers.

Plain sal soda sells cheap, a couple of cents a pound by the barrel. Now in using sal soda it does not have to be as strong as it is usually used for good results, the washing powders are as strong as people commonly use plain sal soda. The large amount of fillers in the powders make them deceptive as to the amount of actual strength of the alkali used.

Good Formula.

When the sal soda is used too strong it eats the hands and often causes the user to buy a weaker soap powder, I have a general mixture that is excellent for cleaning tin, wood that is not painted and iron pots.

One part of concentrated lye.

One part of borax.

Ten parts of sal soda.

Put it dry into screw top jars. Add a heaping tablespoonful to two gallons or more of hot water.

When milk is emptied out of the pans fill them first with cold water, run the china splint brush around them to start any hardened cream, then fill them with hot water containing the washing powder, and use the brush on them to make them clean, then rinse in warm water, if hot water is abundant scald in water as hot as possible and and stand up to drain dry. When hot water is scarce I used to slip the pans upside down on the oven floor to bake dry. Keep the pans bottom side up when not in use as the dust of the atmosphere is bacteria ladened and it settles into the upturned utensils. Before using always rinse with clean water the pans and pails using them wet or without wiping.

For a Good, Practical Milking Machine see the O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

HOW MILK BECOMES CONTAMINATED.

The following suggestions, given in a Storrs (Ct.) bulletin are of interest and value:

Feeding hay and dry grain just before or at milking time fills the atmosphere of the stable with dust. This dust then settles into the milk pail, carrying bacteria with it, thus increasing the germ content of the milk.

Feeding dry corn stover just before or at milking time has the same effect as the feeding of hay and grain, only in a more marked degree, since corn stover usually contains more dust and bacteria than does hay or grain.

Wiping the flank and udder of the cow with a damp cloth just before milking is a very efficient method for reducing the number of bacteria which fall into the milk pail.

The practice of brushing cows at milking time is undesirable. The hair and dust which are thus set free into the atmosphere settle into the milk pail during the process of milking and very materially increase the germ content of the milk.

Stripping a cow dry tends to reduce the number of bacteria found in the milk at the next milking while leaving a small amount of strippings in the udder increases the number of bacterin which the milk will cantain at the newt milking. This is probaly due to the fact that the greater manipulation necessary to thoroughly strip the cow removes the bacteria which would otherwise remain in the udder to multiply during the time before the next milking.

In order to remove the surplus of bacteria existing in the milk cistern it is necessary to discard the first five or six full streams of milk from each quarter of the udder. The removal of the fore milk results in a slightly smaller germ content of the remaining milk, but the difference is so small that this practice is probably only valuable where an extremely low germ content is desired.

The intelligence and personal habits of the individual milker are an important factor in determining the germ content of the milk. This factor must be taken into account in the production of clean and high grade milk.

GOOD HORSES DEMANDED.

Mr. F. M. Douglass, a Los Angeles banker, traveled over a good deal of country in the East, this fall, looking for a string of horses, for himself and friends, to ship to Southern California. He found it difficult to purchase the grades he desired and in every instance found well bred driving horses very high in price. Another Los Angeles party tells us that he traveled through Iowa and Nebraska, in search of a carload or two, of first-class draft horses for the San Francisco market and found it a difficult matter to obtain what he wanted. In some instances $500 were paid for young, well-matched teams, and most of the horses purchased brought as high as $200. We were informed by this buyer that even at these prices the farmers were very indifferent and seemed unwilling to make sales. In one instance he met a man who had a fine pair of well bred grade Percherons and was asked if he cared to sell and at what price. The farmer replied that he would sell, but wanted $450. After looking the team over, the buyer concluded he would take the team and pulled out his check book. A puzzled expression came over the farmer; he grasped the lines, and without another word drove off, to the buyer's astonishment.

These instances are only individual, but they indicate the growing demand for good horses and their scarcity. We have for a long time felt that notwithstanding the introduction of automobiles, bicycles, etc., that there would be a great demand for good, sound horses weighing from 1300 to 1500 pounds. As cities grow and agriculture prospers and expands, the need of horses will be felt, and we are glad to note that the farmers of California are preparing for this demand. Good draft stallions have lately been brought into most of our farming sections, and while the price paid has in many instances been beyond reason, yet it is a good indication. There is money in good horses, and we hope to see California farmers get their share.

Most farm work can be done as well with mares as with geldings, and the farmer who does not keep a few span of breeding mares on the farm raising colts each year is neglectful of his own interests.

EGGS-PLAINED.

A duck who had faithfully stuck to business during the summer and laid several dozen large fawn-colored eggs complained that she was not appreciated. "See that hen over there?" said the duck; "she has not laid so many eggs as I have, nor so big, but she has books written about her and verses composed in her honor, while nobody says a word about me." "The trouble with you is," said a wise buff Leghorn cock, that was standing near, "that you do not tell the public what you have done. You lay an egg and waddle off without letting anybody in the neighborhood know it. If you want to cut any ice in this community you must learn to advertise."

FIGS FOR A COUGH.

A sirup of figs made by putting one-half of a pound of cut sugar to a pound of figs and simmering in as little water as will cover it till it is soft enough to strain, is excellent for a cough. Take a teaspoonful of the clear syrup three times a day. It is simple and easily prepared and has performed some very interesting cures within the personal knowledge of the writer.

"Yes, I saw Dumley yesterday just after his fight with Biffer."

"How did he look?"

"He couldn't.' '

Free Subscription to The Large Illustrated Paper For Dairymen—The Separator News. A big paper, handsomely illustrated in colors, entirely devoted to the success, prosperity and protection of separator users and intending separator purchasers. Every issue brimful of special illustrations and information—what might be called inside facts—that will help you to decide whether a cream separator will pay you, how large a separator you should have and how to care for a cream separator so as to get the most out of it. Articles guarding you against the "patent can" fraud and against the mistakes of buying a too cheap or too complicated separator. Articles telling what State Experiment Stations say of cream separators. Articles comparing different kinds of cream separators. In fact, a whole paper devoted to cream separator news. Would you like to receive every future issue—without a cent of expense to you. Then write the publishers, The Sharples Separator Co., of West Chester, Pa., asking them to put your name on their mailing list. But don't forget to mention that you saw this offer in the California Cultivator.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fere Outfits See O. J. Weder Co., 555-557 So. Los Angeles St., Los Angeles.

See Us for Sanitary Milk Bottles. O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. ☞Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

OAKHURST JERSEYS

Fine young Bulls, by a magnificent son of Golden Ferns, had out of imported cows. Also a bull calf out of a daughter of Golden Lad by a son of Golden Lad, making him 50 percent Golden Lad. We sold his full brother to the late Gen. Shafter, who won in every class he showed him in at Sacramento in 1905. Will sell at low prices considering breeding, to make room for new stock.

L. BRADBURY **DUARTE, CALIFORNIA**

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ORIGIN OF THE FLYING DUTCHMAN TRADE MARK.

WHILE the Flying Dutchman, the trade mark of the Moline Plow Co., Moline, Ill., is familiar to farmers of every quarter of the globe where modern farm machinery is used, comparatively few know of its origin and the reason it was accepted as the trade mark of the company.

When the Moline Plow Co. originated and patented the three-wheeled riding plow the types then in use were cumbersome two-wheeled horse-killing machines which were difficult to operate and dangerous to ride upon. The three-wheeled riding plow became at once so immensely popular that it created great consternation among other manufacturers, who, of course, were not in position at that time to compete for that class of trade. In casting about for a name suitable for this invention, which, by the way, will go down in history as a landmark in the manufacture of farm machinery, the Flying Dutchman was suggested. That was the name given by sailors to a phantom ship supposed to cruise in storms off the Cape of Good Hope. There is a tradition that a Dutch captain, bound home from the Indies, met with long continued head winds and heavy weather off the Cape of Good Hope. Instead of putting back, as he was advised to do, he swore a very profane oath that he would beat round the Cape if it took him until the Day of Judgment. He was taken at his word and doomed to beat against head winds for all time. Sailors, being very superstitious, were always terror stricken when overtaken by a storm at the Cape, fearing they would encounter the phantom ship. The fear the sailors had of this ship and the fear competition had of the plow seemed to make the connection and it was decided to name it the Flying Dutchman. The tool being so popular and the invention to important, an artist was employed to work up the thought. The first posters portrayed a scene at sea, showing a large phantom ship coming out of the mists and bearing down on the smaller craft to their consternation and fear of destruction. This idea, however, did not please the Plow Company and perhaps was not a joyous thought for their competitors either, and it was concluded to abandon this association. In casting about for something which would be more modern, more humane and more happily portraying the value of the device, it was finally concluded to adopt the Bartholdi Statue of Liberty standing in New York Harbor, changing, the statue, however, to conform to the idea of a Flying Dutchman, and the result is a trade mark that is perhaps as well known today as any in the world.

STRENGTH

DURABILITY

SIMPLICITY

A cream separator that is worth buying must give **long service.** To do that, it must be built strong and the **construction** must be simple. To have simple construction in a separator you must have a Sharples Tubular. There is no other cream separator made that will perform its work so well for so long a time as the **Tubular** because there is no other separator so strongly built, or so **simple** in construction.

Sharples Tubular Cream Separators

get all the cream, have low supply can, are easy to run, easy to clean, because there is only one little piece in the bowl to cleanse after each running, and the machine oils itself. It combines **Utility, Simplicity** and **Durability.** A glance at the pie-plate construction of most separators will give you a fair idea of what we mean by "simple construction" and "strength." For full information about the Sharples Tubular write for booklet E. 260

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The Best Condition Powder Made

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Just Right for Making Them Grow

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For Quick Moult and More Eggs

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For the Little Chicks

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The Best Spraying Device Made. We also buy in Carload Lots and sell at wholesale at the lowest market prices Willow Charcoal, Eastern Oyster Shell, Clam Shell, Beef Scraps, Poultry Bone, Bone Meal, Meat Meal, Blood Meal, Soluble Blood Flour, Oil Cake Meal, Caproca Meal, Alfalfa Meal, Hemp Seed, German Millet, Granite Grits, Marble Grits, and in fact a full line of Stock and Poultry Supplies.

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Anthrax and Blackleg
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Are given the preference by 80% of California stockmen because they give better results than others do.

Write for prices, testimonials and our NEW booklet on Anthrax and Blackleg

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High Grade Stock of Best Strains.
Young Stock For Sale.
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SEND $2 for 1000 printed corner-card business envelopes. Quick delivery. $1.25 for 1000 business cards.

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Buff Wyandottes

The Best Flock of Buffs on the Coast. Have been carefully line bred for five years. Won more premiums than all competitors combined this year. Eggs $2.50 and $4. Silver cup for best display

O. S. Hoffman,
San Jacinto, Cal.

FEEDING LIVE-STOCK.

It is possible to compound feeds that, while they would answer the needs of the chemical standard, they would be deficient in those elements that would be appetizing to the animal. Consequently, in a large measure, the feeder must select those feeds that the animal will partake of most freely.

There are five things that the feeder must have in mind. First, palatability of the ration; second, efficiency of the feed to accomplish the desired results, whether it be work, fat or milk; third, cost of the feed must be considered, for on this depends the profit that will be derived from the feeding of any sort of live stock; fourth, the relation between efficiency and cost of feed must always be taken into consideration, and fifth, the effect of the ration upon the animal.

There is such a thing in feeding as the nutritive ration, that the feeder must consider. This will vary during the course of feeding. For instance, at the beginning the animal may be fed a wider ration than at the end. In other words, speaking generally, the ration at first of the feeding may be such that the foliage will be three times the grain; but at the end the proportion may have changed so that the animal will be receiving three times as much grain as roughage.

In many cases the purchase of expensive feeding stuffs, like cottonseed meal, oil meal and gluten feed, are unnecessary and otherwise expensive. The farmer has it within his power to avoid this proposition by supplanting these by growing and feeding protein roughages such as clover, alfalfa, soy beans, cow peas, etc. As a matter of fact, the farmer may as well conclude that the cheapest feeds that he can secure to produce the desired balance between the carbohydrates and the protein is any of the nitrogenous roughage.—[H. W. Mumford, Illinois Experimental Station.

RATIONS FOR COWS.

In this age of experiments we are likely to meet with some very valuable hints on dairy feeding. All may not be practical. The balanced ration for the cow has been shown to be productive of excellent results. The cow that is fed on a balanced ration is more sure to give the most and the best milk.

Here is a suggestion for a balanced ration:

1. 5 lbs. bran, 5 lbs. corn, 20 lbs. alfalfa hay.
2. 6 lbs. corn meal, 4 lbs. bran, 20 lbs. alfalfa hay.
3. 4 lbs. corn, 1 lb. oil meal, 6 lbs. bran, 10 lbs. corn fodder and 10 lbs. wheat hay.
4. 3 lbs. gluten feed, 2 lbs. corn meal, 3 lbs. bran, 2 lbs. oil meal, 20 lbs. silage, and 10 lbs. wheat hay.
5. 4 lbs. ground oats, 4 lbs. bran, 20 lbs. alfalfa hay.
6. 5 lbs. corn, 1 lb. cottonseed meal, 5 lbs. bran, 40 lbs. silage, 15 lbs. oat hay.
7. 2 lbs. oil meal, 4 lbs. corn meal, 4 lbs. bran, 10 lbs. oat hay, 10 lbs. oat hay.
8. 10 lbs. bran, 5 lbs. oats, 15 lbs. oat straw.
9. 10 lbs. alfalfa hay, 10 lbs, millet hay, 4 lbs. oats, 8 lbs. bran.
10. 8 lbs. bran, 2 lbs. oat meal, 2 lbs. corn meal, 20 lbs. silage, 10 lbs. barley hay.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

It will not be necessary to weigh the ration each time, for after mixing two or three feeds one can guess pretty closely at the proper amount to use.

THE GOOD COW.

Prof. T. L. Haecker of the Minnesota Agricultural College gives the following pointers for the selection of a good dairy cow: "It does not matter whether the udder goes well back or not, or whether it is large or small. Look first at the body or barrel, to see if that is large and deep, as this is the measure of the cow's ability to store, digest and assimilate food. Next look at the thigh, to see what disposition she makes of the food, beyond the amount necessary for support. The more the rear line of the thigh curves in the cheaper will the cow produce each pound of butter. If she has a large barrel, the food will go there and something will be done with the food nutrients. If the cow is fleshy and blocky, she puts these nutrients away as tallow in her tissues. If she is spare, angular, ewe-necked and cat-hammered, she turns the nutrients into milk solids and puts them in the udder. If the udder is large, she puts large quantities of water in it with the fat and other solids. If the udder is small, she puts the fats and other solids in the udder, because there is no other place to put them and puts less water in the milk."

Prof. Haeckler says that for six years every pound of food given to each cow at the Minnesota college has been weighed and every pound of milk and butter fat produced from the food has been weighed and recorded and the facts, without a single exception, are as stated. Prominent milk veins, dished face, yellow ears inside, slim tail, full, square udder etc., he declares are of no value. The only thing to know is that the cow has a spare deep frame and small thin quarters.

DAIRYING IN ITS INFANCY.

Prof. J. L. Haecker of the Minnesota College of Agriculture and Experiment Station is quoted in the Owatonna Press as follows:

"The dairy industry in the West is still in its infancy and we confidently look for even more rapid growth in the future than it has made in the past. The time is not distant when Minnesota alone will derive an annual income from this one industry of $50,000,000. We will invade not only the eastern but the foreign markets. We can produce better and cheaper butter than can Denmark or any other country, for they all must look to America, and especially to the Northwest, for their feed stuffs, and whenever we can convince the western grain grower that it is to his advantage to convert his surplus feed into butter, ship the more concentrated product, realize a greater income and at the same time improve the fertility of his farm the change will surely be made."

BETTER THAN BANK NOTES.

The farmers in the East have learned that pure bred hogs will beat the bank on interest rates. We can not recommend any one breed over another, for any of them are good. Try Berkshires, Poland-Chinas, Chester Whites, Ohio Improved Chesters, Yorkshires—any breed will give you better returns if properly handled than the best investment the banker ever makes.

To Cure a Cold In One Day.
Take LAXATIVE BROMO Quinine Tablets. Druggists refund money if it fails to cure. E. W. GROVE'S signature is on each box. 25 cents.

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Trees Early Crawford, Hale's Early and many other varieties of Peach trees; all fine budded stock.

Large stock of all the leading varieties of Apples, grafted on whole roots and free from all pests. Also a fine stock of Cherries, Pears, Burbank and S.B.S.S. Walnuts, etc. Send for price list.

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Strawberry Plants 150,000 Brandywines
200,000 Klondyke
and a few Arizonas

All First-Class Plants

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Strawberry Plants

800,000 Brandywines
400,000 Al
20,000 Pride of Michigan

All grown from Kellogg stock and guaranteed First-Class Plants. Write for prices.

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Gardena Dewberry -	$8.00
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Aroma B - - -	3.00
Senator Dunlap - -	3.00
Klondyke - - -	3.00
(Improved) Lady Thompson	2.50

All plants fresh from the east last spring, and were raised on virgin soil. Write for prices on 100,000 lots.

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Headquarters For The
Burbank Beauty

A real beauty and the earliest and most vigorous of all strawberries. A good table berry and will ship further than any other berry. $3.00 per thousand.

Brandywines—The old standard variety of the southwest. Can fill orders by the thousand, hundred thousand or million. $2.00 per thousand. Plants carefully packed and we guarantee their arrival in good condition.

FAIRVIEW FARM NURSERY
G. H. HOPKINS, Prop. BURBANK, CAL.

Twenty Thousand First-Class
Walnut Trees
Two Thousand Grafts
No Disease. Long Roots and Every Tree Warranted

SANTA BARBARA SOFT SHELL
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PLACENTIA PERFECTION
FRANQUETTE, MESANGE
PRIZE, ETC., ETC.

Improved Gardena Dewberry, and all Other Kinds of Berry Plants. Ornamentals, Etc.

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MAGNOLIA NURSERY WHITTIER, CAL.

Walnut Trees Stocky, healthy Seedlings 6 to 12 ft. high. Selected seed from grafted orchard. Best variety on the market.
C. W. Sherwood, Fullerton, Cal.

Lady Thompson Strawberry Plants
$1.50 per Thousand
M. J. Rooks - Azusa, Cal.

No meat of equal weight contains so many life giving elements as the egg.

THE MISSION OLIVE.

(Continued from Page 28.)

early and evenly; others are tall, lofty, sturdy trees, bearing elongated fruit and of very uneven ripening; while still others are of a dwarfish habit of growth, the fruit small and of very little value. It is not uncommon to find olive plants that have sprung up spontaneously under trees from pits of fruit that dropped, especially where the soil had not been disturbed for a season.

THE BEGINNER'S ORCHARD.

The Stock.

Good stock should always be insisted upon. Such stock does not necessarily call for the largest plants of the kind that can be secured, but should consist of strong, healthy plants of fair size for the age, with good roots and typical of the variety. It is false economy to secure low-grade stock simply because the first cost is a little than less than that of better grades.

Preparing the Land.

Land can not be too carefully prepared before it receives the plants. This is especially true where strawberry plants or other small fruits are to be set out. The soil should be as thoroughly pulverized as for a seed bed. Of course, in the case of orchard lands the most of the surface can be readily worked after the trees are planted, but in most cases it will be found more satisfactory to attend to all such details before any of the ground is occupied by trees or plants of any kind.

Setting the Plants.

If extensive areas are to be planted it will often be found economical to make furrows along the line of the rows, and of sufficient depth to receive the plants, though this is one of the many details that is a matter of personal preference. The essential feature of the operation is to make the holes that are to receive the plants sufficiently broad to take the roots without bending them from their natural positions, and deep enough so that when they are refilled the plants shall be somewhat deeper—in the case of most kinds of trees, two are three inches—than they were in the nursery row. But in setting out strawberry plants and others of similar nature care must be taken not to cover the crown of the plants. The soil needs to be packed about the roots very firmly.

Before setting in the ground, all mangled or bruised roots should be removed and the tops cut back proportionately to the amount of the root system that has been lost. It is the practice of some growers in setting trees to trim to a mere whip by removing all the side branches. With peach trees this is the more usual custom, unless the trees are very large.

The practice which is quite common, especially among small growers, of placing a quantity of manure in the bottom of the holes before setting trees is not one to be commended. If the manure heats, it is likely to cause the drying out of the roots, thus defeating the very object of the intended extra attention. It is better to have the soil uniformly in good condition before planting the stock.

Andrew Reid, of the Hesperia hill section has a Picoline olive tree that will net him $20 this year. The Picoline olive is at home in the Hesperia hills. Fifty of these trees per acre would be $1000.

When writing advertisers mention Cultivator

Walnut Trees

Come and Let Me Show You the Best Trees on the Market

Seedlings—Several Thousand grown from the very best selected, hand picked by myself from grafted trees. Placentia Perfection and Santa Barbara Soft Shell.

Grafted Trees—2500 Placentia Perfection, extra selected and absolutely guaranteed.

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Established 1887 by Present Owner

STEWART BROS. With a bigger and better stock than ever of
ORNAMENTAL AND FRUIT TREES
are located with their salesyard this year at ***732 S. Spring St.*** Los Angeles

WALNUT TREES grown from carefully selected seed
I have a fine lot of trees. Call and see them. Postal gets price list. **A. A. MILLS, Anaheim, Cal.**

A Wide-Awake and Up-To-Date Seed House

We are now publishing our 14th Annual Catalogue. It is artfully designed; the style is new and original. The Cover Pages portray the busy scene at the Los Angeles market during the early morning hours. Every vegetable is illustrated and is described in Spanish as well as in English. Send your name and address asking for the catalogue.

We are Southern California Agents for
The Glendale Incubator Co.
a hot water machine, constructed along lines that are a working demonstration of the true way to apply the fundamental theory of artificial hatching.

In one year it will pay for itself in the saving of time, trouble and expense.

Those using the GLENDALE INCUBATOR are its most enthusiastic friends, and they are not running the machine for fun but for profit.

Its chief points of superiority are, durability, ease and economy of operation.

Each day's delay means the loss of DOLLARS to you, so do right, and write as soon as you can get a postal card for our catalog, telling you why you can't afford to be without our INCUBATORS and BROODERS.

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The California Fertilizer Works' Fertilizers are highly recommended by several members of the Tulare County Citrus Fruit Exchange, Fresno vineyardists and all others who have used them, for having given **grand results** and **profits.**

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Have You Ever Thought of the great convenience of gas? **Do You Know** that you can have the most perfect light on your country place?
Would You Like to Learn How? Then send for free descriptive catalogue No. 3 of the **SUPERIOR GENERATOR**
When you do that tell us the number of lights you burn and the time they are used each evening, and we will tell you the size generator that will make all the gas you need for lighting and cooking.
You Will be Surprised to learn how cheaply you can enjoy one of the greatest comforts of the city. Write for the catalogue number 3 now, while you are thinking about it.

Superior Light and Heat Company
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The White Faced Black Spanish

Are famous as layers of large white eggs at all seasons of the year. We won all prizes at the Breeders Great Show, 1907. **Choice Cockerels For Sale. $5 Eggs. $1.50 per 13, $4 50 per 50, $8 per 100.** Special matings, $3 per 13. Fertility guaranteed.

Lock Box 112, Dolgeville, Cal.

The Vegetable Garden

By ERNEST BRAUNTON

Garden Soils

A DEEP soil of good tilth will absorb and hold for the use of plants a large part of the rainfall. Such soil is in good condition for the growth of common crops.

Soils can be put in the best of tilth, when in proper state of moisture, by deep plowing, disking, and harrowing.

Evaporation from soils can be lessened by covering them with mulch. The best mulch and the only practicable one on a large scale, is a soil mulch. This can be produced and maintained by surface cultivation. To be most effective, the cultivation must be repeated after rains that puddle the surface soil.

In semiarid regions special effort should be made to utilize the rainfall. The ground should be plowed soon after the removal of a previous crop; it should then be settled and smoothed. By frequent cultivation of fallow land, moisture may be stored for a crop the next year. In this way crops have been grown in semiarid regions once in two years when crops every year on the same land have failed.

In dry climates the corn crop succeeds better when put in with the lister. It roots deeper, stands up better, and the work in growing a crop is less than when planted in level-plowed soil.

Strains of plants that have originated or been grown for many years in dry climates should be selected for the semiarid regions, and the rate of seeding should not be more than one-half that common in humid regions. Stronger, better-rooted, and more hardy plants will thus result.

Organic matter should be maintained in soils to improve their physical condition. This may be accomplished by green manuring, and by the plowing-in of manure, straw, stalks, and other vegetable refuse.

Leguminous crops, such as clover, alfalfa, and cowpeas, used as green manure, not only increase the humus of soils but supply nitrogen from the air. This is the cheapest way of adding this important fertilizer ingredient.

Anyone who proposes to begin gardening without irrigation in a region of light rainfall should be properly cautious. He should not be misled by glowing accounts of large crops; he should investigate carefully the possibilities of the particular region in which he expects to settle; he should have clearly in mind beforehand the kind of crop which he will produce, and he should not undertake the work, if a failure of crops at the beginning will mean to him complete and permanent disaster. It should be clearly understood that gardening in the semiarid regions, without irrigation, can not in the nature of things be as certain or as profitable as gardening under favorable conditions in the humid regions.

CUCUMBER DISEASES.

The next important step in the production of cucumbers is constant watchfulness for the appearance of blight or mildew, and immediate, thorough treatment when discovered. These diseases are of almost annual occurrence throughout the southern trucking regions, though not very common in California, and growers of cucumbers should plan to make the spraying of the plants a regular feature of their cultural work.

The subject of disease is, however, of such great moment to the truck grower that the general preventive treatment for blight and mildew should be mentioned at this point. This consists of thoroughly spraying the plants with Bordeaux mixture once in ten days or two weeks after they have begun to run. Bordeaux mixture is made by bringing together the milk of lime and a solution of copper sulphate (bluestone.) For cucumbers it has been found that a mixture made from 3 pounds of copper sudphate and 6 pounds of freshly burned stone lime to 50 gallons of water makes the safest and best solution for this work.

IRRIGATING ONIONS.

In arid regions, immediately after the onions are set out, they must be irrigated, and this should be followed with a second irrigation in about seven to eight days. Usually it takes about two irrigations to establish the little plants. The subsequent irrigations will vary more or less, depending on the soil and climatic conditions. Other things being favorable, the time between the irrigations to get good results, should be about every eight or twelve days. Since the onion is a surface feeder, it is very desirable that the uper portion of the soil be kept moist and cool.

MUSHROOMS AS A MARKET CROP.

Only the so-called 'cultivated mushroom," Agaricus Campestris, is grown for market. The culture is very easy and almost any one can succeed at it.

This mushroom thrives best at a steady temperature of about 55 deg. F. to 65 deg. F. The temperature must not fall below 50 deg F. nor rise above 70 deg. F.

In France and England this mushroom is extensively grown for market in sheds, stables, cellars, disused quarries, mines and caves it is also grown during the fall months out of doors in garden-beds, kept covered from direct sunlight. Mushrooms do not require sunlight as green plants do, but ordinary diffused light will do them no harm, though direct sunlight is injurious. The plant may also be grown in ordinary pits roofed over or under cold frames or disused hotbeds—the sashes being kept covered with straw to exclude the light.

In preparing mushroom beds, whether for indoor or outdoor beds, horse droppings must be obtained, though one-fourth the manure may be from cows. The fresh manure should be mixed with one-third its bulk of clean garden or pasture loam soil The mixture is then firmly beaten down with a spade and allowed to stand under cover for a week unless in the meantime it ferments too violently, in which case the pile must be turned over and made afresh , adding a little fresh soil to the pile. In making the beds, firm the mixture of soil and manure by treading on it with the feet or beating with a brick. Make the bed when firmed 8 inches thick. Let bed stand for a few days, then insert a thermometer into a hole made for spawning. The spawn of the cultivated mushroom is sold in bricks by all the larger seedsmen. Another variety is sold in flakes, but the brick spawn seems to be the best. Each brick is broken into a dozen or eighteen pieces. Make holes in the bed about ten inches apart each way and insert the pieces of brick-spawn so that they will be covered two inches deep. Beat the covering as firm as rest of bed. Let the spawned bed stand for 6 to 8 days and then cover the whole with two inches of clean garden soil. This soil covering must not be put on until at least six days after spawning.

Prisoner: Your honor, I used to give your daughter singing lessons.

Judge: Twenty years.

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Largest Growers of Black Acacias in Southern California

SPECIALTIES: Crimson Winter Rhubarb, Pansies (we have 50,000 of them). Fruit and Shade Trees, Roses, Palms, etc. Wholesale and Retail Prices made. Special prices on acacias in large lots for tract planting.

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Is wanted for our 1907 Catalogue mailing list. To get it we will mail you one ounce of a specially fine mixture of Sweet Pea seed—for

Five Cents

If you have already written us—send the name and address of a friend who has a garden. Catalogue now ready.

171 Clay St. C. C. MORSE & CO. San Francisco

THE "BOSS" TREE PROTECTOR

Made of Yucca Palm

Is cheap, durable and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn, grasshoppers or dry winds. Can be easily removed; will last for years.

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P. S.—See Article in Cultivator on Page 550, issue of December 6th.

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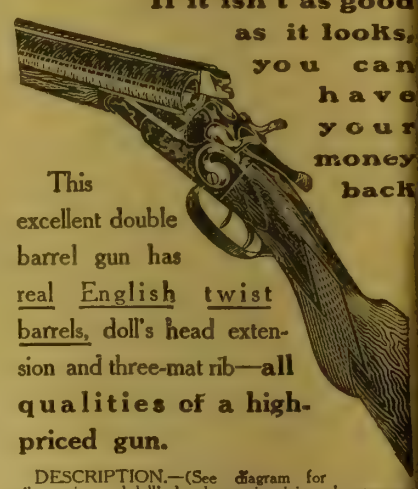

This excellent double barrel gun has real English twist barrels, doll's head extension and three-mat rib—all qualities of a high-priced gun.

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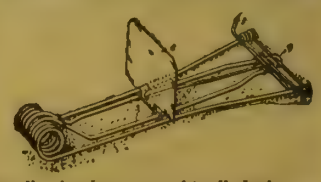

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The Ornamental Garden

By ERNEST BRAUNTON

Planting School Grounds

COMFORT IS NOT the only reason for planting about the schoolhouse. The trees have also an educational value. Indeed, bare grounds may be regarded as an opportunity. Children interested in the work of selecting, planting, and growing trees and shrubs about the school can gain in the work on little knowledge of right principles and methods. Many people think that to plant a tree all that needs to be done is to dig up a sapling, or buy it, and set it in a hole. This is a great mistake, responsible for many unnecessary failures. Some knowledge of tree culture is a thing sure to prove useful to a large proportion of school children.

Forestry is beginning to attract attention as a possible subject of school instruction. So far the interest in it is mainly as a branch of nature study, but its growing economic importance may eventually result in its extensive introduction into courses of study. Technical forestry can not be taught in the schools as part of a general education, and it ought not to be supposed that tree planting on school grounds looks in that direction. Nevertheless a plantation of forest trees or a wood lot, in connection with a school, would give an excellent opportunity for study of forest growth and management, and in many places it is perfectly feasible.

But there is another side to the educational value of tree planting, which is of first importance. It is money well spent to make the schoolhouse and everything about it attractive and beautiful. Here is one of the centers of life of the community, the one in which is gathered its most impressionable element. The school is supported by public expense in order to make good American citizens. It aims at securing the highest development of mind and character. Keep this thought in mind and see that the drudgery inside is lightened by the natural beauty without, for in our State we may garden all the year.

ROSE TYPES.

The Hybrid Noisettes.

These roses are always in bloom, and are very valuable; should be in every collection, where they are sure to give satisfaction.

The Mosses.

The Moss Rose originated in Switzerland. Sepals are covered with moss-like glands; unsurpassed as buds. Should be heavily pruned in winter.

The Hybrid Teas.

The roses in this group are much stronger growers than the full Teas, and combine free flowering qualities with the rich coloring of the Hybrid Perpetuals.

The Polyanthas.

This is a group from Japan. They are ever-blooming, flowers are small but exquisitely formed, and are borne on slender stems in panicled clusters. Growing low and compact, they are very desirable for edging.

The Bengals or Chinas.

Natives of China. Of moderate growth and very fragrant. The foliage and flowers are small. They are valuable for borders on account of their compact growth and the profusion of br liant crimson buds they produce.

The Bourbons.

The varieties of this class differ greatly in their general characteristics; those of moderate growth require close pruning. They are constant bloomers; the flowers are generally of light shade; the foliage is leathery, rich and luxuriant; and they are at their best in the Autumn.

Tea or Ever-Blooming.

This is one of the most important groups or roses and on account of their rance, combined with their delicate tints, and fine form, are deservedly popular. They require more care and attention than any of the other classes and should not be pruned too closely.

The Noisettes or Champneys.

This class of roses is of American origin. The group is of vigorous growth and the flowers have a tendency to grow in clusters. With a few exceptions all the varieties are vigorous climbers, and their rich bright green foliage, combined with the delicately tinted flowers, renders them most attractive for this purpose.

The Prairies.

This is a very distinct class, remarkable for its hardiness. The leaves are large, rather rough, and of a rich dark green. They grow very rapidly, exceeding in this respect any other variety, and are excellent for covering walls, and old buildings; bloom in large clusters after all common roses are gone, and present a very striking appearance.

The Hybrid Perpetuals.

These constitute a very striking and distinct family of roses, easily distinguished from all others by their luxuriant foliage, prodigious blooms and vigor of growth. They are perfectly hardy and of very robust habit, thriving with little care or attention. The more vigorous growers require close pruning. Although styled perpetual bloomers, they are not so in reality, blooming only in the spring and fall. As a class they are deservedly popular, varying in color from snowiest-white to the deepest crimson.

PRESERVING HOLLOW TREES.

Often a valuable park or roadside tree is found to be hollow and decaying rapidly, and unless something is done to preserve it, it will not last long. We have seen trees preserved as follows: Remove all unsound and decaying wood with a chisel until the sound wood is exposed. Mix one part Portland cement and three parts clean, sharp sand into a thin mortar and fill the cavity with it. When it is about "set" coat the exposed surface with a mortar of about one part cement and one part sand. It is recommended to treat the exposed wood, inside the cavity, with a solution of one pound copper sulphate in five gallons of water before putting in the cement. In cases of cavities being too large to fill by reason of the expense, the trees may be plastered inside with the above mixture.

First Politician—You remember that famous saying of Lincoln's "You can fool all the people some of the time, some of the people some of the time, but you can't fool all the people all the time."

Second Politician—Well, I'm no hog. Some of the people for mine.

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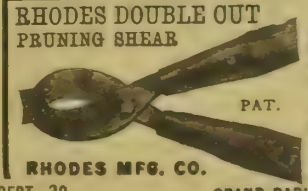

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California Cultivator

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Thursday January 10 1907

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CALIFORNIA HORTICULTURALLY.—Fruit Growers and Chinese; Horticultural Ordinances; Rice Culture; New Method with Prunes.

FARMS WANTED.

A real estate dealer remarked, the other other day, that he can notice a demand growing for country places—small farms. And he says, the increasing tendency of city dwellers to buy homes in the country, is not confined, as is generally believed, to the very rich. Those of moderate means are also gravitating toward the green fields. For a number of years it has been the fashion of the rich to spend the greater part of the year in the country, and to occupy the town house but a few weeks at most. On the Pacific Coast this desire has run to beach localities. Now there is a disposition to make permanent homes in the country, and this desire is not confined wholly to the millionaires. Men with modest incomes are buying homes as far removed from the dust, noise and smoke of the cities as their business will allow. While this exodus to the country benefits directly only farm properties contiguous to the cities, the final effect is to raise the value of such property over a wide extent of territory. If what President Hill, the great railway magnate, says is true, namely, that within the next fifty years most of the now flourishing industries will have become silent because of the exhaustion of the mines and forests and wells upon which they depend, and that the population will then be compelled to turn to the tillage of the soil, the appreciation in the value of farm lands will be enormous. In any event it is the part of wisdom to stick to the farm. It will feed and clothe one and keep a roof over his head whatever happens.

HORTICULTURAL COMMISSIONERS.

If the law now on the statute books of California creating and maintaining County Horticultural Commissioners is to stand for anything, it must be construed with the force it was intended to carry when it was enacted.

Politics should have no bearing whatever on the appointment of individuals to compose the commission, men should be selected by the boards of supervisors with only one thought in mind; competency and executive ability.

The expense of maintaining the county horticultural commission is a very considerable item for the public to bear, and in return the public is entitled to receive adequate return. It is quite often the case that a change in boards of supervisors leads to changes in the appointment of horticultural commissioners, and it is too frequently the case that these changes, are not for the interest of the public. There may be instances, of course, where a change of commissioners is necessary; where more competent members are needed, and in such cases the people gain by the reorganization. But where the old members are satisfactory it is best to let well enough alone. It takes some time to learn the conditions of a county and new members must gain the knowledge before they can be useful to horticulturists. In the meantime the orchards are suffering and the county is paying the new commissioners for the knowledge they are acquiring. Hence the old saying, "Let well-enough alone," applies with peculiar emphasis to horticultural commissioners who are satisfactory in every other sense possibly except their political affiliations.

What the public wants is efficiency in the commissioner not personal political convictions.

THE PUMPKIN PIE.

While Thanksgiving is the anniversary when this New England dainty shines at table the brightest and occupies the chiefest place on the culinary baord, yet on almost every other important festival occasion it holds a place undisputed and unchallenged.

The New York Independent undertakes to tell us a secret about the pumpkin pie. Why it isn't the same today as it was when mother used to make it. The secret told by the writer is as follows:

"I think I may be able to help you to a real pumpkin pie, such as our mothers knew how to make. The pie was evolved out of the patient continuance in well-doing of the housemother. The secret lies not in"pinches"of this or that good thing, but in the right preparation of the pumpkin before it is ready to be made into pies. It lies in the stewing of the pumpkin.

Cut the pumpkin into cubes an inch square. Place in a large kettle with plenty of water. Let it boil from eight in the morning until four or five in the afternoon, adding more water if needed. Then with an old-time pudding stick begin to stir it. Keep on stirring every few minutes until your pumpkin is reduced to a rich brown, dry sauce.

The process of stewing it down requires hours.

The little mother sat in her rocker with her knitting, and did not let the pumpkin burn. Or she flitted about the kitchen attending to other duties, but not once did she forget the pumpkin When every drop of water was dried out her watch was over. Of this dry, brown sauce, one cupful is enough for a pie. Put an egg in your pie if you like. It is not necessary. Good milk, sugar, of you wish it, sweeter than the punmpkin itself, and spice to your taste, and you will not be obliged to eat over in memory that portion of your New Year's dinner."

Ah,. there is the trouble; what housekeeper in these strenuous days has time to watch her pumpkin stew nine hours?. We fear the art has passed away.

FRUIT GROWERS MISUNDERSTOOD..

Not only in this State, but in adjoining States, a misapprehension appears to exist regarding the resolution adopted by the Fruit Growers Convention at Hanford, a short time ago, regarding Chinese labor in California.

To know exactly what action the convention did take it will be well to recite the resolution passed by that body.

It is as follows:

Whereas, Farm labor is becoming increasingly difficult to obtain, and in California especially the great fruit and wine industries are threatened with disaster unless some remedy be found to get more labor; therefore, be it

Resolved, That the fruit Growers of California, in convention assembled, favor such modification of the Chinese exclusion act as will permit the enactment of laws making possible restricted immigration of laborers irrespective of nationality.

This resolution was passed after due deliberation, with all the facts set forth clearly and impartially, and stands as the deliberate conviction of the members, who were brought to endorse it because of the conditions under which they are forced to work at the present time.

We do not, for a moment entertain the thought that the resolution is the expression of the desire of the undividual members of the convention. The truth is they are forced to it because of inability to secure and retain American or English labor.

In the development of our Western Empire we must have the benefit of skilled labor if we can get it, but if we can not we must have less intelligent labor. The Chinese has shown himself to be more tractable than the Japanese, whose personal interest, at all times, dominates his loyalty to his employer. The Chinese, therefore is the better suited to California conditions, and as we can not procure Caucasian labor, and Japanese help is not dependable, what must we do for laborers in California, except to take the Chinese.

The farmers of this State can not permit their crops to go to waste to gratify the sentiment of political agitators. They have too much at stake, so has the State, whose resourses would be crippled immeasurably were the products of the soil to be allowed to rot in the field.

Prof. Wickson explains the situation tersely, it seems to us, in this declaration. "Sincerely as our growers prefer loyal and efficient service by those of Causasian blood, it is incontestable that such labor is not to be had in adequate quantity and at a price which the present margin of profit in fruit operations can allow."

This is the undisguised situation. We are facing a serious problem and the sooner we accept the logic of the facts the better it will be for the future interests of the fruit growers of California.

GARFIELD'S DISCOVERY.

Commissioner of Corporations, Garfield, tells the country that it is in the grip of railroads. This assertion he bases on an examination he made of the effect of water transportation on railroad rates.

The suggestion that such an investigation should be made was advanced in a resolution offered last spring in the House of Representatives but no action on the measure was taken, the railroad interests being strong enough to prevent its consideration.

The commissioner of corporations decided, however, that the matter was one of sufficient importance to engage the attention of his experts and for several weeks past there has been quietly under way an inquiry into the relations of railroads with canals and steamship and canal boat lines.

The facts unearthed demonstrate, so Mr. Garfield claims, that the railroads have their hands upon the water transportation, both inland and coastwise, and that a working arrangement even exists with ocean steamship companies. The ability of railroads to maintain non-competitive rates and to disciminate between different sections of the country thus becomes apparent.

News of Country Life in the Golden West

Southern California

HORTICULTURE.

The Bloomington olive oil mill is on a thirteen-hour a day shift. The company is securing a big supply of olives, which will insure a good season's run.

Oranges are moving quite rapidly from Bloomington, some growers cleaning up their trees at the first picking. The fruit is in excellent condition, and is demanding a good price.

All of the Rialto packing houses have a crew busy. The fruit brought in is of a very superior grade, of fine color and flavor, and shows no effect whatever of the recent low temperature.

It is reported by Col. W. M. Slosson, supervisor of the Santa Barbara forest reserve, that very satisfactory progress has been made in the preliminary work of establishing the auxilliary tree planting stations that have been undertaken.

An authority at Santa Ana says in regard to hard and soft shell walnuts, that the output of hard shells is growing less and less each year. All orchards now being planted are of the soft shell variety, and the old hard shell trees are either dying off or being grubbed out.

There seems to be a tendency among the Corona fruit men to retard the movement of oranges until the fruit is well colored. It is anticipated that shipments will be light until the middle of January. Seventeen cars of oranges have been sent out since December 1, and sixteen cars of lemons.

The California Vegetable union has closed a contract to handle the output of the Olive Cabbage Grower's association the coming season. Its acreage aggregates over 250. The prices will be fixed from week to week, the same as the past season. The acreage of Fullerton, Placentia, Olive, La Habra and Orangethorpe is large.

The Gowen & Willard packing company of Santa Ana, has taken up the line of extracting and shipping walnut meats and will make this a specialty hereafter. This company has at present about sixty people engaged in cracking nuts and taking out the meats. The coast affords a fine market for this line and the demand is good.

AGRICULTURE.

Three hundred acres of cabbages will be turned into sauer kraut at the Huntington Beach cannery.

From 400 to 500 acres of tomatoes will be planted the coming season just to supply the big cannery at Huntington Beach.

Another rain has given the ground a good soaking, adding about 2.13 inches during the storm of the past week, and bringing the total for the season up to 6.30 inches, reports the Perris Progress.

The express shipments for the week from the Escondido office of the Wells Fargo Express Co. were 1890 dozen of eggs, 5221 pounds of poultry and 830 pounds of cream.

The season's rainfall to January 1st in San Bernardino totaled 8.83 inches, or almost double the average rainfall to January 1 for the past 36 years, and two and one-half times last year's record at this time.

G. W. Belden returned from Modesto last Monday with 27 head of fancy milch strain Holstein cows and one bull, for which he paid from $150 to $350 each. Some of the cows have records of from 17 to 24 pounds of butter per week.—Holtville Tribune.

The precipitation at Highland for the storm ending at 10 o'clock Jan. 1st, was .68 of an inch, the record for the season being 10.29. This is the first instance in ten years where the season's rain record has reached 10 inches in December.

On Monday last Jas. Allen shipped a carload of Christmas hogs to the Cudahy Packing Co. of Los Angeles. The whole drove averaged 420 pounds apiece. One fine fellow that was raised by Jim Brown at Oceano came to $26.25.—Arroyo Grande Herald.

The rain storm which began in Redlands Thursday morning, seemed over last night at midnight, only a few light clouds remaining in the skies at that time, and the moon and stars generally shining. The total rainfall after midnight Thursday night was 95 hundredths of an inch, making 2.97 inches for the storm of three days. This makes the season's rainfall 13.32 inches, the largest at this time of the year since 1889-90.

Professor Shaw Endorses Stock Food.

Professor Thomas Shaw has this to say in reference to Stock Foods. "They will always be found useful when properly made. The time will never come when intelligent feeders will cease to use them. The necessity for using them and the advantage therefrom will become greater as foods become increasingly dear. Whether it will be profitable to feed them will depend upon the necessity for using them and on their cost. My special desire, however, is to show that they have a place in the economy of intelligent feeding. The question of price must be fought out between buyer and seller."

With this indorsement from one of the foremost authorities on feeding in the country, it would seem that the value of feeding tonics, etc., is unquestionable; therefore, the only problem is at what price such foods cease to become profitable.

In Bulletin No. 106 issued by the Hatch Experimental Station they recommend the use of certain medicinal tonics to be given in one tablespoonful doses one a day for 10 days, then omit for three days, then give 10 days more. They estimate the cost of the tonics they recommend at 20 cents per pound.

Dr. Hess Stock Food, formulated by Dr. Hess, a regular graduate of medicine and also veterinary surgery, contains the best tonics known to science, together with the salts of iron which are the greatest known blood and tissue builders, the nitrates of sodium and potassium which assist in eliminating the poisonous waste material from the system, and laxatives which regulate the bowels.

This preparation is manufactured by Dr. Hess & Clark, Ashland, Ohio, and is sold on a written guarantee at five cents per pound in 100 pound sacks, smaller quantities at a slight advance. At this price can anyone question the economy of feeding such a compound? It costs less than a penny a day to feed this preparation to a horse, cow or steer, and but three cents per month for the average hog. Consider how little additional increase in weight or milk is necessary to cover the cost of this preparation.

J. F. Dotzman, Clinton Stock Farm, Centralia, Ill., says: "I am feeding Dr. Hess Stock Food to my horses, three stallions, (Hal-Gordon) pacer, brother to Star Pointer; George Geisler, trotter, out of the best blood lineage in existence; Andrew Jackson, trotting bred coach horse, son of George Geisler, above. All three stallions in public service, stud. Also work horses.

"I bought Dr. Hess Stock Food at Berger's Drug Store at Carlyle. I had never used any stock food before, but reading in Coleman's Rural World of Dr. Hess' professional knowledge, I purchased a sack of Dr. Hess Stock Food and fed it to five horses, and am almost surprised at its good results. Will keep it always on hand.

A Studebaker Almanac Free.

The Studebaker Almanac for 1907 is in many ways a decided advance over the previous issues of this popular book.

In addition to the usual astronomical tables, etc., it is crowded full of valuable data and information for the farmer.

The cover, printed in colors, is from a handsome drawing by Edward Penfield, a well-known artist.

Our readers can obtain it free for a 2-cent stamp to cover postage, by addressing the Studebaker Bros. Mfg. Co., South Bend, Ind., and mentioning this paper. Do not fail to send for it.

Oysters in Cucumber Cases.

Cut the top slice off each cucumber, scoop out the inside, leaving a thick shell, and heat in oven.

Cream the oysters, making the sauce thick and rich, fill the cases, return to oven, heat well and serve hot.

Northern California

HORTICULTURE.

The total orange and lemon shipments from the Porterville, Lindsay and Exeter districts up to December 29th were: Oranges 1408 carloads, lemons 76 cars.

The reports show that Lindsay shipped 313 cars more than Porterville and 382 cars more than Exeter, and within 60 cars of the total shipments of both Exeter and Porterville.

Lindsay now has about 5000 acres planted to oranges and less than half in bearing and probably not over one-third in full bearing, so it will be seen that the increase of shipments from this point during the next five years at least will be very large.

An expert on orange-growing in the central part of this state, has examined the soil in the vicinity of Biggs in Butte county very carefully and pronounces it far better for citrus fruits than a large portion of the land already profitably devoted to that industry.

The highest gross received for a carload of grapes from Florin of 1000 crates was $1881. This car netted the growers $1262.20, and was the first car of the season, while the lowest return to the growers was for a car shipped four days later in the same market.

Contrary to expectations the orange shipping from Fair Oaks continues with little abatement. The severe wind storm made it necessary to gather the crop and ship as soon as possible. Mr. Oakes has his packing-house busy handling oranges and olives.

The San Bernardino Sun says: The Rialto Citrus Union expects to get out seven or eight carloads of oranges at this time. The Exchange, or Orange-Lemon Association, will probably put a few lemons put in for good measure. The C. C. U. is working on oranges out about six carloads. The Rialto Orange Company has planned to get out five or six cars of oranges with and will put out two cars tomorrow. The Speich, Morgan company put out a car of lemons yesterday.

Prof. M. B. Waite, who has charge of the work being done in the Sacramento valley, to rid the orchardists of the destructive pear blight, states that the campaign is progressing in Sacramento county in a manner eminently satisfactory, and despite the fact that many orchards will be wiped out of the valley, is not entirely rid of the pest it will be the fault of the growers who have from the initiation of the work last winter consistently opposed the plans of the bureau.

With the closing of the year there will be no dried fruit in the hands of the growers of Anderson section. It all having been sold and delivered to the packers; also the packers will close the packing season with empty houses. There is only about 200 tons now left of the prune crop in both the Sanitary and C. F. C. A. packing-houses at this place, and this will be packed and shipped within the next fifteen days, which will wind up a very prosperous and lively fruit year for this section.

AGRICULTURE.

A Sacramento dealer in discussing the situation said:

There are nearly 5000 bales of hops yet unsold in Mendocino county and the growers are holding out for 15 cents.

The wind-up of 1906 shipments of oranges from the Lindsay District shows an increase over the previous year of 160 cars, and places the total at 755 cars.

Almost seven feet of rain for the 1906! Such is the record of rainfall at Nevada City. The heavest annual fall of rain was in 1867, when 102.85 inches were recorded; and the next heavest was 85.47 in 1884, and now 1906, follows with 82.72 inches.

A correspondant at Biggs writes:—"The easy life heretofore enjoyed by the wheat-grower, and the immense tracts of lands controlled by him and necessary to his mode of agriculture has retarded the developement of this county until some of its most important assets have been lost sight of almost entirely."

"Without question there is a much less quantity of potatoes at present than is usual at this season of the year, and with a car shortage prevailing all over the country and a greatly increased consumptive demand, it would seem as if a strong advance in the price of potatoes was likely to occur before new potatoes are in sufficient supply to be a factor in regulating prices."

The apple shipping season in Pajaro valley has virtually closed, as there will probably not be more than eight or ten more carloads to go forward, therefore a few figures regarding the crop wil no doubt pdove of interest at this time. About 2000 carloads of apples have been shipped in the green state for the season to date from Watsonville, Pajaro, Vega and Aromas, as against approximately 3000 carloads lost season.

John H. Tull, the agent of the bureau of foreign seed and plant introduction, has arrived at Chico, direct from Japan, where he was engaged in securing roots of the Japanese matting rushes for experimentai purposes throughout the United States. He will be followed in few days with a shipment of 150 cases or one carload of roots obtained under the most vigorous opposition of the Japanese of the Japanese producers and the local government.

The James Feeley company of Red Bluff, closed its packing-house Saturday afternoon after a run which was practically continuous from September 1st, nearly four months, and most of that time the works were in operation both day and night. Between three and four hundred tons more of dried fruits were packed than last year and the employes had nearly two months more work. These figures read very smoothly, but they represent a force of 42 people all the while and this number includes from 15 to 25 girls. The weekly payroll ranged from $400 to $500 and frequently while buying fruit the expenditures have amounted to $20,000 in a single day.

SOME GOOD POINTERS.

"He who dreameth may be a genius, but he who doeth is a hero."

"Who would convince must feel and who would feel must believe."

"If you can't get along with people, keep away from them."

"Because a man doesn't call you a liar, he doesn't believe all you are telling him."

"A man may be judged by the companies he promotes.' '

"Love is the only thing that was old when time was a baby."

"The heart is too often far from the hand in a formal greeting.' '

"Many a mushroom promise is a toadstool of fulfilment."

"The life of an insurance agent," siged Premyums, "is full of wormwood and gall."

"I hadn't' noticed the wormwood," growled the victim.

"HIS METHOD WAS PECULIAR."

Many "fool" articles occasionally get into the daily press about the wonders of plant life, but the following regarding the origin of a new melon, from a recent number of the "The Times" of Los Angeles, surely caps the climax:

"His method was pecular. He took a selected pineapple melon vine, and covered its blossoms with the pollen from the eastern pomgranate and the Muscat grape. For three years he carried on the experimental work, but finally tired of the task and for five years the little handful of seed that he had saved lay wrapped up in a parcel in his home."

"Last year he had the satisfaction of securing fifteen tons of the delicious fruit, and he then felt that the melon was so securely fixed that the growing might be undertaken on a commercial scale."

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

BUYS THE WORLD'S FAMOUS EGG FOOD NO. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER

Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the GOLD MEDAL at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th. 1904.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

PETALUMA INCUBATOR CO.

Main Office and Factory, Petaluma, Cal., Box F. Los Angeles, 595 South Main Street
San Francisco Office and Salesroom, 33 Market St.

The Largest Poultry Supplies House in the United States

LARGEST INCUBATOR EMPORIUM

On the Pacific Coast

MAKERS

"LOS ANGELES" HOT WATER **"PEERLESS"** HOT WATER

AGENTS

"MODEL" HOT AIR

MADE BY

CHAS. A. CYPHERS

Peerless Chick Feed Composed of ten different Seeds and Grains, Beef Scraps and Charcoal, makes a complete balanced ration which insures health and rapid growth in baby chicks.

Granulated Milk Is made of pure skim milk, dried and ground to about the size of cracked grain. It contains 50% protein and 15% pure albumen. **$3.50 per 100 lbs.**

315 So. Main **Henry Albers Co.** Los Angeles California

BEMIS BARRED AND WHITE PLYMOUTH ROCKS

During 1905 and 1906 I have exhibited at Haywards, Sacramento, Alameda, San Francisco, San Jose and Phoenix, Arizona; and my birds have taken many prizes, including many of the Special Prizes. I am able to furnish the best birds and eggs at moderate prices. Eggs for hatching from choice matings $5.00 per setting of 15 eggs. I cannot furnish large lots for incubators. Write for circular.

MRS. FLORENCE E. BEMIS 1757 Nineteenth Avenue, Oakland, Cal.

White and Buff Wyandottes
Prize-Winning, Egg-Laying, Wealth-Producing Strain.
M. E. DILLINGHAM, 1187 San Gabriel, Cal.

Single Comb White Leghorns Exclusively
Eggs for Hatching, $1.00 per 13, $5.00 per 100. High Fertility Guaranteed. Phone Park 682.
J. E. Beadle, 901 St. Louis St., Los Angeles, Cal.

Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

People Who Do

"I DIVIDE people into two classes" said my friend Mrs. Sherman when we were discussing success and failure last week. "People who do, and people who do not do!"

It is true there are people who go ahead and do a thing without waiting. There are people who are doing something all the time, people who enjoy work, those are the successful people, those are the people that will succeed in raising poultry; fine poultry, and those are really the only people who do succeed in the poultry industry.

The people who "do" and who know how are the ones who succeed in every business, and more especially with fowls. My desk has for many years been a sort of clearinghouse for those in difficulty with their chickens, and many a puzzling letter has been studied over, while occasionally a sick or dead fowl has been brought in for me to inspect. I never like to have sick fowls carried about the country, for fear of disseminating disease, but I remember one old man, who had worked for me, coming in with a dead hen, she had acted as if paralyzed and he thought she might have been poisoned by squirrel poison, set out by his neighbors.

We opened her, found the liver greatly enlarged and disintegrated, small tumors in the ovaries, and the abdominal cavity was full of a bad smelling fluid.

"How old is the hen?" I asked.

"I really do not know," he replied, "you see the hens have been on the farm so long and are all alike, so I do not know one from another."

"Well, I will tell you, I think this hen is very old; may be ten years old or more, and she has died of old age as much as anything.

I then showed him that she had spurs growing on her legs like an old male bird; he had noticed these, but when I asked if he had heard a sound like a young cockerel crowing, or trying to crow in the morning, he replied he had.

"It was your old hen," said I, "she was so old she had stopped laying; probably had not layed for four or five years, and had begun to assume the characteristics of a male bird."

"Then you do not think it was strychnine?"

"No! I feel sure it was old age, and not the fault of your neighbors."

I then advised him to use leg bands on his fowls, as by this means he could tell their age. I explained to him that the fowl had cost him four or five years feed at $1 per year. This was a loss of four or five dollars besides the loss of the hen, and if he had marketed her five years ago, he would have been that much ahead.

"What are leg bands, anyway?" he asked. "Leg bands are small metal bracelets with a number on each one: they are usually made of aluminum, or copper and are quite light and easily put on. By putting one on the right leg of each pullet this year, and on the left leg of each hatched next year, you can tell at a glance which are the one and two year old hens. If you want to keep your hens for the third and fourth year, you can put other kinds of leg bands on, using aluminum for two years, and then copper for two years. Or you can use different styles and shapes of bands."

Another way of marking is by using a small punch, making a small hole in the web of one foot as soon as the chick is hatched. This only takes a minute, and if clearly punched out, the mark stays for life. I always mark the different pens a different way, so that I know for sure the pedigree of each chick. For instance, all the daughters of "Snow Queen," my prize White Rock that layed 225 eggs in nine months, had a hole punched in the outside web of the right foot; her grand-children in the inside web of the same foot, and the following year the great grand-children in both webs of the right foot, besides this, they all had leg bands when old enough. I have also frequently marked the young by sewing on their legs a piece of woolen braid scarlet for one brood, blue for another, this was merely temporary, until they matured, or were large enough to wear the metal bands.

Then again, by having the leg bands numbered, and by penciling the number on the egg which each hen laid. I could keep track of the number of eggs laid by each; the number of chicks hatched from each, and in time, as each chick developed and was banded, I had a complete "family tree."

It was interesting work and I tried to explain it to my old man who thought his hen had been poisoned.

"Lots o' trouble to take for hens!" was his comment. He was not one of the people "who do things."

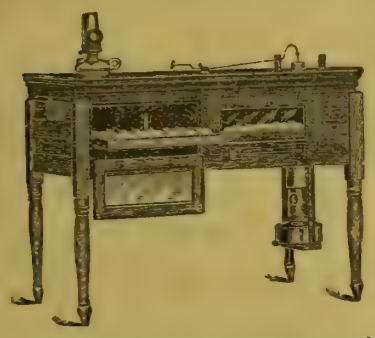
When this goes to print the Poultry show of the Poultry Breeders of Southern California will be over. It was surely a good show both as regards numbers and quality. Eastern breeders and even judges from the East expressed to me their surprise at the very superior quality of the birds. "They could not be surpassed," said one in Chicago or in New York. "It only shows" said another, "how foolish it is for breeders here to send away for stock when they could do better by buying at home."

"That is what I have always said," I replied. It is most unwise to send away for fowls and run the risk of bringing sickness into the flock, as change of climate from the East to California often develops disease, when we have right here in our midst fowls superior to any in the country. I am not prejudiced, for an Eastern judge assured me that the Columbian Wyandotte hen winning the first prize, was better than any he had seen in Chicago or any other large show where he had judged. A list of our advertisers who are winners will be given and those who wish to improve their fowls; and we nearly all of us can improve our flocks, should get from them a cockerel or a hen or a setting of eggs and be prepared to win next year. This is just the right time to prepare to get early layers for next fall and winter.

We know a man so cross-eyed that he put his hand into another man's pocket and abducted therefrom a watch. He said he wanted to learn the time. The judge told him it would be three years.

Make the hens scratch in clean litter for every kernel they get. They need the exercise, they will not eat so fast and stuff full, then go and loaf.

The "Chatham" Incubators and Brooders



are sold on their merits only—you be the judge

84 days free trial Take off 4 hatches to prove that the Chatham is the machine you want, then if not satisfactory it costs you nothing.

I want every reader to send for my free catalogue, telling all about this machine, and why "Women Succeed," "Profits in Poultry," "Broiler Raising," "Ducks for Market," "Which Hens to Keep," "About Turkeys," "To the Farmers," — a book of good useful information, and practical. Send a postal card with your name and address and this book will be mailed you free.

GEO. W. FOOTT,
321 East Morrison St. Portland, Oregon

Spargur's Trap-Nested White Leghorns

Eggs from 200-Egg Hens, $1.50 per 15, $6.00 per 100
From Second Best Pens, $1.00 per 15, $5.00 per 100
Indian Runner Duck Eggs $1.00 per 13, $5.00 per 100
H. G. Spargur - Soquel, Cal.

Chicks Hatched

From Brown Eggs, 4c
From White Eggs, 3½c
Minimum Charge, $2.50 per Hundred Eggs. No direct charge for infertiles.
Bihn-Schofield Method
51,000 Hatched Last Year, Shipped to Five States
Combined Egg Capacity, 45,000

Bihn Bros. Petaluma California — M. A. Schofield Gardena

SHADE'S Select Yards of Ten Hens with egg record of 234½, $3.00 per 13. All other yards at $1.50 per 15. All yards above 184. Incubator lots $8.00 per hundred. A neat little folder sent on request.
The Little Gem Automatic Feeder, $1.25.
SHADE'S RHODE ISLAND RED FARM
123 E. Eleventh St., San Bernardino, Cal.

WHITE ROCKS
Fine large vigorous farm-raised stock. Bred for utility and fancy points. Eggs, 15 for $1.50, $6.00 per 100. Call and see our stock and you will leave your order, for that is the way that all lovers of Fine White Rocks do that come to the White Plymouth Rock Ranch, J. T. Davis, Prop., Pomona, Cal.

Blue Andalusians
Eggs from Cosh, Morse and Griffith prize winning, producing strains, $2.50 per setting. Incubator lots, $7.50 and $10.00 per 100.
Mrs. T. R. Griffith, 3111 Wa ton Ave., Los Angeles

Ross & Tate, Altadena, California
Breeders and Importers of
Buff, Black, and White Orpingtons
Have for sale Trios, Cockerels and Pullets. Eggs for hatching, settings or hundreds. Write or call,
Two Blocks North, One Block East Altadena Post Office

S.C.Wh. Leghorns and I. R. Ducks

Eggs, $1.50 per setting, $6.00 per 100.
Send for Illustrated Catalogue.
JOHN P. BODEN 638 Second Street Watsonville, Cal.

Make Your Hens Pay
Bigger Profits by getting Bigger Hatches and hatch chicks that live. Beginners, as well as experts, do this with the Latest Pattern
CYPHERS Incubators and Brooders
Improvements to possessed by no others. 90 days' free trial with Money Back Guaranty. Our 244 page Guide to Poultry Profit FREE to you.
CYPHERS INCUBATOR COMPANY, BUFFALO.
Oakland, California, New York, Boston, Chicago, Kansas City.

POULTRY EXHIBITIONS THIS FALL.

Those who have so far been successful this winter, in exhibiting their poultry and winning the prizes which have been awarded in the California shows are those who, have learned by former experience thoroughly to condition and care for their poultry, so as to bring them in tothe exhibition hall in the best of condition. To those not acquainted with the meaning of "conditioning" poultry for winter exhibitions, we would say that they are groomed for the occasion the same as are horses or cattle for the show room.

We suppose it did not escape the notice of the new beginner even, that one of the most important features of success in the exhibiting of poultry is to have thoroughly well-groomed specimens that are strong and vigorous in constitution and able to stand the strain of the preparation for the show pen, as well as the excitement of the exhibition hall when there. The feathers of exhibition specimens must be absolutely clean, and perfect in formation as well. There plumage must besuch as can only be obtained through perfect health and perfect preparation.

The birds shown through California this fall have been remarkably well-groomed, as a general thing, which added interest to their presentation.

Solution of Exhibitions.

It was apparent all through the successive shows, from first to last, that the utmost pains has been given the selection of the birds to be exhibited.

Fowls for exhibition were selected from among the owner's flocks on account of elegance of finish, form and plumage. These fowls were kept from the sun for several weeks prior to the exhibition. They were fed those foods most likely to give them good constitutional vigor and impart a gloss and finish to the plumage. When brought to this condition of perfection, they were thoroughly washed in tubs of water, so that their entire plumage, shanks, feet and head as well, were clean and free from dirt. This is an absolute necessity in the showing of white fowls of any kind. Great benefit can be imparted to the dark or black-colored poultry as well. Those who have never seen a fowl washed for exhibition would scarcely understand the amount of dirt that accumulates on poultry. A tub of clean warm water is scarcely fit to wash more than three or four fowls before it must be changed. In washing the fowls, three tubs of water must be provided—one of quite warm water, about the same as would be made use of for the washing of clothes, the second lukewarm water, the third cold water.

The fowl is first placed in the warm water, and some good kind of soap, usually ivory soap, thoroughly rubbed into the feather plumage with the hands and fingers down to the skin. After being washed in this way, the feet and shanks are thoroughly scrubbed with a stiff brush, and as much of the soap and dirt as possible rinsed from the plumage. Then they are removed and thoroughly rinsed, so as to remove all the soap, in the second tub of luke-warm water. When cleansed in this way, they are passed to the tub of cold water to finish the rinsing and lessen the possibility of their taking colds. When removed from this, they are wiped as dry as possible

WHITE MINORCAS

We have taken the greatest care in the selection of our breeding stock, as well as importing fresh blood from the best Eastern strains. Price on eggs from selected stock, $2.50 per setting of 15, $4.50 two settings. Incubator lots $10.00 per 100. A few cockerels and pullets for sale, to make room. Prices on application.

Coulson Poultry and Stock Food Co., Petaluma, Cal.

Beef Scraps

GUARANTEED ANALYSIS :
Protein 65%
Fat 8%
Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

Raw Bone

GUARANTEED ANALYSIS :
Protein 25%
Phosphates 45%
Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods
WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

El Oro Poultry Farm

Produces birds which show their worth as layers and as

Winners of Ribbons

At the Fresno Show this year they won :

Brown Leghorns—1st Cock, 1st Cockerel, 1st and 2nd Hen, 1st and 2nd Pullet. 1st Pen.

Buff Rocks—3rd Cockerel, 4th Hen.

Black Minorcas—1st and 2nd Cock, 2nd and 4th Hen.

Buff Cochin Bantams—1st Hen, 1st Cock.

Blue Andalusians—1st Pen, 1st, 2nd, 3rd and 4th Hen, 1st Cock, 1st and 2nd Cockerel, 1st Pullet.

Bronze Turkeys—4th Hen, 4th Gobbler.

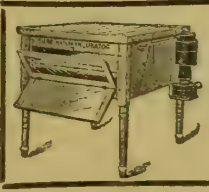
Buff Orpingtons—3rd Cock, 5th Hen, 4th Pullet.

Besides these, El Oro Birds won the Bankers' Cup for the greatest number of points of any one breeder, with 66 points; Special for Best Mediterraneans. Besides that, in another special these birds literally

Took the Cake

Eggs, $1 to $3 per Setting. Stock, $1 to $5 Each

El Oro Poultry Farm Fresno California



"Sure Hatch" Incubators and Brooders
Are known the world over for their ***Simplicity*** and ***Reliability***. It is useless to place in the hands of a novice a machine that would puzzle a scientist. That is what we do not do. We guarantee them for five years, and positively stand by the guarantee. Send for free catalogue No. 25. It is full of poultry matter.
Doke Stock Food Co.
711 South Main St. - - - Los Angeles, Cal.

Yes, We Can Supply Almost Any Kind and Quantity of Thoroughbred Poultry

Eggs By the Setting / By the Hundred / By the Thousand

Southern California Agents **Cyphers** Incubators and Brooders Poultry Foods

KLONINGER BROS.

POULTRY SUPPLIES

838 SO. MAIN - LOS ANGELES, CAL.

with towels and cloths, always rubbing the plumage the right way to remove the moisture. Then they are placed in coops in a very warm room or near the fire, where they will dry as quickly as possible.

Fowls that are thus washed, if well done, soon fluff out, and the plumage has a much more pleasing appearance than before. All kinds and colors of poultry are washed in this way for exhibition. When one becomes expert in the washing of plumage, it is but a small task to prepare 25 to 30 from four o'clock in the afternoon to a late bed-time. Those who cannot give their time to the cleansing of poultry during the daytime hours are often found at from six o'clock to midnight preparing their poultry in the hope of having them in a condition that will win for them the coveted prizes.

Where the entire fowl is not cleansed in this way, the legs and shanks at least must be thoroughly washed and cleaned with soap and a brush. Remove every possible piece of dirt in and about the shanks and along the scales. This adds considerable attractiveness to the shanks themselves. When thoroughly washed or cleansed, they can be polished with a woolen rag or chamois and made to look very smooth and attractive in the exhibition pen. The cleaning of the face, comb and wattles had better be done with a soft sponge and lukewarm water. Many use a mixture of alcohol and water, while others use oil. Either of these is apt to cause a scale to form upon the comb and wattles and rub off, much as dandruff will work off the head. Nothing makes the face, comb the wattles more attractive than the use of water and sponge. In this way they can be thoroughly cleansed, and dried with a soft cloth, without the danger of scale forming.

Poultry for exhibition should be fed nothing but solid, substantial grain food, such as wheat, hulled oats and a little corn. The fowl that has been conditioned on mash food will not stand the strain of the exhibition room as well as those that have been properly fed on a grain ration.

When poultry has been returned from the exhibition hall, every care and attention should be given them. Keep them from being exposed to inclement weather, for at this time they are quite apt to take cold if so exposed. An English fashion, which is a very good on,e is to feed the poultry that comes from the exhibition on some stale bread soaked in ale or beer. A little of this acts as a stimulant on the poultry and often wards off the danger of cold or of the change from the relaxation of the heated exhibition hall to the cold of poultry houses.

To be successful in the large exhibitions of the country means the giving of every care and attention to the conditioning and preparing of the fowls for the show. It is scarcely possible at the present time to win prizes at the poultry exhibitions, unless the poultry shown has been put in the best condition for the occasion. Perhaps no other feature of the scale of points has so much influence for and against the specimen as has condition. A bird that is otherwise in perfect condition, might be able to win prizes from a much better specimen that was in poor condition. Perfect condition covers many evils, and often the successful exhibitor can lay much of his success to the fact that he was able to put his birds in the finest show condition.

Willard Poultry Farm
Hynes, Cal.
WHITE WYANDOTTES — WHITE MINORCAS
INDIAN RUNNER DUCKS
Winners at late Los Angeles Shows. White Minorca and White Wyandotte eggs, 1st pen, $3; 2nd pen, $2 per 15. Duck eggs, $2 per 13.
Mrs. Hungerford, Mgr., Hynes, Cal.

Columbian Wyandottes
Winners at Breeders Great Show, 1907
COCKS, 2nd, 3rd and 5th; HENS, 1st, 2nd, 5th; COCKERELS, 2nd, 4th and 5th; PULLET, 1st, 2nd and 4th; PEN, 2nd. Club's Special Cup for best male and female; 5 Special Ribbons; also Special Ribbon for best COLORED female; Ribbon for best shaped female. Stock and Eggs in any quantity. Eggs, $3 and $5 per 15, $20 per 100.
ED. M. BURNELL, South Pasadena, Cal.

Black Tailed Japanese Bantams
Winners of 3 Silver Cups at late Los Angeles Show, also 1st Cock, 3rd and 4th Hen, 1st and 2nd Cockerel, 1st, 2nd, 3rd and 4th Pullets; 1st and 2nd Pen. Eggs for hatching, stock for sale
LeRoy B. Burnell, South Pasadena, Cal.

El Casco Poultry Yards
Pure Bred Stock
S. C. White Leghorns—Large eggs, great layers. Eggs for hatching only. Choice **R. C. White Wyandotte** pullets for sale; bred to lay. Also a few **Barred Rock Cockerels** from prize winning strain. Satisfaction Guaranteed.
J. F. GOETTING, El Casco, California

Anconas Lay · Anconas Pay
Imported and Domestic Matings Now Ready. Surplus Stock All Sold. Let us book your order at once for future delivery. L. L. Viereck, Pres. Ancona Club of America, Albany, Oregon.

O. K. Trap Nests Shows the hen that lays the eggs and keeps her from eating or breaking it after it is laid.
O. K. Feeder Just the thing for your Scratch Shed. Send for circular explaining its workings.
C. B. Williams
Box B Ontario, Cal.

L. E. BERKEY
Breeder of Prize Winning **Wyandottes**
Won at the Breeders Society Show, 1907, 6 prizes on White, 3 prizes on Buff, 11 on Partridge and Silver Cup for best display, which only goes to prove that I have the best flock of Wyandottes on the Coast.
L. E. Berkey
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Four Firsts out of 5; 3 Special Ribbons out of 4 and Silver Cup, the specials being given by the National White Wyandotte Club. Won all prizes on Hens but one and all Pullet prizes were won by my stock, one of my customers winning two Cockerels, 1st and 3rd, Cocks 2nd and 5th, Pens 1st, 4th and 5th. **Mammoth Bronze Turkeys and Buff Cochin Bantams, Silver Laced Wyandottes and Lakenvelders** For Sale Cheap. Address
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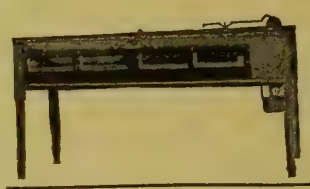
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CALIFORNIA INCUBATOR CO., MAXWELL, MAY 27, 1906.
Gentlemen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come so far and being so long on the way without the loss of a single one, but it is an undisputed fact that such was the case We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. CAMPBELL.
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are laying hens—every one of them.
But about the Rooster—
In all breeding the **male** makes the most marked impression on the **female** offspring.
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The Walter Hogan System selects the great laying strain male as quickly and unerringly as it does the 250 egg hen.
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You Have the Tools with which to make a flock of money makers. Not One Cent till you **know it's so.** For particulars write to
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We are the original manufacturers of the Bottomless Fruit Picking Bags, and own the patents for same. Not only do we manufacture for the entire Southwest, but our bags may be found from the Great Lakes to Florida.

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Bountiful Orange Crops

Every soil has so much growing power per acre, just as a boiler has so much horse-power per square foot. To keep this growing-power up to the maximum, you must keep the soil supplied with the necessary fertilizing elements, just as you must keep the boiler supplied with fuel and water. Therefore, use

POTASH

A maximum yield of oranges is impossible without a good supply of Potash in the soil. A complete fertilizer containing at least 10 per cent. of Potash should be used.

We want to send you our free booklet, **"Orange Culture."** Write for it if interested in growing oranges.

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20,000 # Citrus Trees **20,000**

Washington and Thomson's Improved **Navels** and **Valencias** Seedless Grape Fruit

One and Two-year Buds, Clean, Healthy, Vigorous Stock.
Better Secure Your Stock At Once, as the Supply Is Short.

Pollard Brothers **Alhambra, California**

Tom Lewis' Fertilizer

The Best and Cheapest

For Orchard, Garden or Field it has no equal. A trial will convince you of its merits. Send for my circular of testimonials.

Tom Lewis brought to this office an orange weighing two (2) pounds, grown by W. J. Wilson, a prominent orange grower and vineyardist of Newcastle, Placer County, who has used Tom Lewis' Fertilizer for four seasons and swears by it.—FROM SACRAMENTO EVENING STAR, DECEMBER 23, 1904.

Office and Works, 1916 and 1918 10th St., Sacramento, Cal.

Mandarin Orange History

Continued from Page 29.

Reasoner Bros., by Bonavia said to be a suntara orange, I must say that any attempt to decide this question places one on exceedinly debatable ground.

In 1805 two varieties of mandarin oranges were introduced into England from Canton by Sir Abraham Hume and fruit produced from these trees was illustrated in 1817 and 1824. According to du Breuil, the mandarin orange was introduced into Europe (continental) about 1828. In the vicinity of Parma it was cultivated on a large scale as early as 1842 and its culture in the county of Niza and the region surrounding Genoa dates back to 1848 or 1850.

The conclusions reached by du Breuil are further sustantiated by the fact that Gallesio appears not to have known this tree and Risso and Poiteau make a mention of it in the first edition of their work. Du Breuil states that in commerce a distinction was made, betweent the mandarins of Parma and those of Spain, Algeria, Niza and the coast of Italy.

Bonavia says that the mandarin orange was probably introduced into India from Egypt with a collection of orange trees in 1847, and that a second introduction was made by himself in 1863. It is not improbable t hat the mandarin oranges found their way into Egypt from some one of the countries of southern Europe.

CITRUS INSTITUTE.

A special Citrus Fruit Growers' Institute will be held at Riverside, on the 22-23-24 of January, under the auspices of the State University; J. B. Neff, manager. The conception of the meeting arose in this way: The grounds solicited for the Citrus Experiment Station, located at Riverside, are now being prepared for commencing work in the spring. It was suggested that a conference of practical growers, where the needs for the institution could be brought out, with suggestions from their standpoint as to what investigations may be made most vauable to the industry might materially help in starting the work wisely.

The University management heartily approved and will do what it can for the success of the meeting. President Wheeler, Prof. Wickson, Dean of the Agricultural Department; Prof. Smith, director of the station, and Mr. Mills, local manager, will represent the University; and growers of large experience from various orange sections, whose safe judgment and unselfish interest in the success of the industry, command the confidence of growers generally, will lead the discussions on practical matters needing the attention of the experiment station.

Gov. Pardee, who took much interest in securing the experiment and pathological stations, will be present and address the convention. Indications are that it will be the largest and most significant meeting of citrus fruit growers yet held. J. H. REED
Chairman Local Committee.

Miss Smart: Oh, you may sneer at pet dogs, but they are faithful anyway. I'd rather kiss a pug dog than some men.

Mr. Sneer: Well, well, some men are born lucky.

"I know I'm late, m'dear, but ash true ash I'm here, I wash held up by footpad."

"That was very kind of the footpad, I am sure. You certainly needed some one to hold you up."

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ORANGE SEED BED STOCK

F. H. Disbrow Nurseries
R.F.D. No. 1, Pasadena, Cal.
Both Phones

When writing advertisers mention Cultivator

The Produce Markets

Los Angeles Markets

Los Angeles, Jan. 9, 1907.

Butter

Local Creamery, 2-lb, sq	.70
Valley Creamery, fancy	.65@67½
Coast, fancy	.62½@65
Cooking	.22@24

Cheese

Cal. Young America, per lb	.18
California Anchor	.17
Cal. 3-lb. hand	.19
Northern	.17
Domestic Swiss	.20
Imported Swiss	.28

Eggs and Poultry

Eggs have taken a tumble of five cents during the past week.

Eggs, fresh ranch, per doz	.32
Northern candled	.30
Fresh Eastern	.28

The following are average prices which dealers pay to producers for live weight:

Hens, per lb	.14
Young Roosters, per lb	.16
Fryers	.16
Broilers, per lb	.13
Old Roosters	.8
Turkeys	.17
Geese	.12
Ducks	.13

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lb	.7@7,25
Prime Steers	.4
Cows	.3@3½
Calves, per lb	.5
Sheep, ewes, per head	.4.00@4.50
Lambs, per head	.3.50@3.75
Wethers	.4.75@5.25

Potatoes

Salinas, per cwt.	.2.00
Burbank, Local	.1.90
Highland	.1.85@2.00
Sweets, Yellow, per sack	.3.00

Vegetables

Onions are firmer and some dealers have made an advance in their selling price.

Beets, per doz.	.20@25
Bell Peppers, Green, lb	.3@4
Chili Peppers, Green	.2½@3½
Chili, Dried, per lb	.20
Cauliflower, per doz	.1.25
Cucumbers, per doz.	.1.00
Cucumbers, per box	.75@1.00
Carrots, per doz.	.20
Celery, per doz.	.40
Casaba Melons, per crate	.1.75@2.00
Egg Plant, per lb	.12
Garlic, per lb	.6
Green Corn, local, per sack	.75@1.25
Green Onions, doz. bunches	.25
Lettuce, per crate	.1.00
Lima Beans, per lb,	.6@8
Onions, Aust. Brown, sk	.1.25@1.35
Onions, Y. Danvers	.1.25
Parsnips, per doz	.25@30
Rhubarb, per box	.75
Radishes, per doz.	.10@15
String Beans, per lb.	.8
Sugar Peas, per lb	.7@8
Summer Squash, per box	.40
Turnips, doz. bunches	.15@25
Tomatoes, per box	.65@75
Wax Beans, per lb.	.10@12

Citrus Fruits

Lemons	.3.00@5.50
Valencias	.3.50@4.00
Navels	.3.00
Grapefruit	.3.50
Grapefruit, seedlings	.3.00

Fresh Fruits

Apples, Bellefleur, per box	.1.40
Apples, Spitzenburg	.2.00
Apples, Fall Pippins	.75@90
Figs, Black, per lb	.8@9
Figs, White, per lb	.8@9
Pears, Bartlett, per box	.3.50@4.00
Pears, Winter Nelis. per lb	.6@7
Blackberries	.12
Raspberries	.20
Strawberries	.20
Quinces, box	.1.00
Grapes, Muscat	.1.50
Grapes, Blk. Morocco	.2.00
Red Tokay	.2.00@2.25
Grapes, Cornichon	.1.25@1.50

Dried Fruits

Evap. Apples, fancy, per lb	.9½
Apricots	.17
Peaches	.11@12½
Pears	.13
Plums	.11
Prunes, fancy	.7@9

Beans, Dried

Limas, No. 1, per cwt	.5.00
Pink, No. 1	.2.75@3.00
Lady Washington	.2.90@3.00
Small White	.3.60@3.75
Black Eyes	.4.50@5.00
Garvanzas	.4.25@4.50

Honey

The figures below are jobbers prices, that is, prices at which the jobbers sell to grocers and others in small lots. The producers can take from this his freight to Los Angeles and one cent per pound for commission and will have left the net price to him.

Extracted, water white, per lb	
60-lb. cans	.7½@8
Extracted, white	.7½
Light Amber	.7
Comb, water white, 1-lb fms	.16
Light Amber	.14
Beeswax	.25

Nuts

Almonds, new, per lb	.19@20
Peanuts, Virginia	.7
Peanuts, California	.6½
Walnuts, No. 1, S. S.	.14@15

Hay

Barley, No1	.14.00@16.00
Barley, No. 2	.12.00@14.00
Alfalfa, Local, per ton	.15.00
Plain Oat Hay, No. 1	.14.00@16.00
Plain Oat Hay No. 2	.800@1300
Wheat No. 1	.14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, No. 1, per cwt	.1.40
Barley (to producer)	.1.00@1.05
Rolled Barley	.1.40
Corn, per cwt	.1.40
Cracked Corn	.1.45
Feed Corn Meal	.1.45
Shorts	.1.45
Bran	.1.20
Oil Cake Meal	.2.50
Cocoanut Meal	.1.50

San Francisco Markets

SAN FRANCISCO, Jan. 8, 1907.

Butter.

California, ex, per lb	.37
California, firsts	.30
California, seconds	.26
Packing stock	.21

Cheese

New California, fancy	.14½
Cal. Young America, fancy	.15½

Eggs and Poultry

Fresh Ranch Eggs	.48
Eggs, first, per doz	.40
Hens, per doz., small	.5.50@6.00
Hens, large	.6.50@8.50
Young Roosters, large	.600@7.50
Young Roosters, small	.4.50@5.50
Fryers, per doz	.5.50@6.00
Broilers, per doz.	.3.00@4.50
Old Roosters, per doz	.5.00@5.50
Ducks, young	.5.00@7.00
Geese; per pair	.1.50@2.00
Turkeys, per lb	.18@20

Live Stock

Steers, No. 1.	.7½@7¾
No. 1 Cows and Heifers	.5½@6
Hogs, 80 to 130 lbs	.6@6¼
Hogs, 250 to 350 lbs	.6½
Calves, per lb	.4@5
Lambs, yerlings	.5½@6

Potatoes

Oregon Burbank	.1.45@1.75
Salinas Burbanks, ctl	.1.50@2.00
Rivers	.1.00@1.40
Sweet Potatoes, ctl	.1.74@2.00

Vegetables

Asparagus, per box	.125@1.50
Cucumbers, per doz	.1.00@1.25
Chili Peppers, Green	.50@85
Egg plant per box	.3.00@3.50
Green Peas, per lb	.9@12
Summer Squash, large crate	.1.00@1.25
Onions, Red, per sack	.85@90
Onions, Yellow	.75@90
Peppers, Green, Bell	.40@75
Rhubarb, per box	.75@1.00
Summer Squash, large crate	.2.00
String beans	.15@17
Tomatoes	.1.25@2.00
Wax Beans	.15@17

Citrus Fruits

Lemons	.3.50@5.50
Valencias	.300@400
Sweets	.3.25@3.50
Navels	.1,75@3.50
Seedlings	.2.50@3.00
Grapefruit	.2.00@3.50
Limes	.3.50@4.00

Fresh Fruits

Apples, fancy, per box	.1.25@1.50
Apples, common, per box	.75@1.00
Blackberries, per chest	.3.00@4.50
Cantaloupes, large crate	.40@1.00
Grapes, Seedless	.60@90
Grapes, Black	.40@75
Grapes, Muscats, crate	.100@1.25
Grapes, Tokay	.80@1.10
Plums, per box	.75@1.00
Pears,	.1.50@2.00
Prunes, per box	.60@85
Raspberries, per chest	.12.00@14.50
Strawberries, Longworths	.7.00@8.00

Dried Fruits

Apples (evap.)	.7@8
Apricots, per lb	.15@18
Figs, white	.2½@4
Muscatels (loose)	.7@8
Prunes	.2@2½
Peaches	.10@12½
Raisins, seeded (1906)	.8½@10
Thompson, unbleached	.7½
Thompson, bleached	.9@11

Beans and Seeds

Limas, No. 1	.4.25@4.40
Pink	.2.10@2.25
Large White	.2.15@2.30
Small White	.2.80@3.00
Black Eyes	.4.50@4.70
Red Kidneys	.3.75@4.00
Bayo	.2.30@2.40
Brown Mustard	.4.25@4.50
Yellow Mustard	.4.25@4.50

Hops

1906 Crop (future)	.12½@16

Nuts

Almonds, new	.15@17½
Peanuts, Virginia	.6½
Peanuts, California	.5½@6
Walnuts	.11@15

Honey

Clear White Comb	.16½
Amber	.14@15
Extracted	.5½@7

Hay

Barley, No 1	.12.00
Barley, No 2	.10.00
Alfalfa, local	.9.00@11.00
Oat	.12.00@15.00
Wheat No. 1	.17.00@18.00
Wheat, No. 2	.13.00@16.00

Grain

Wheat No. 1	.1.22@1.24
Barley No. 1	.1.12@1.15
Corn, small yellow	.1.50@1.55
Corn, yellow	.1.27@1.30
Oats. White	.1.45@1.55
Oats, Red	.1.20@142½
Ground Barley, per ton	.24.00@25.00
Bran, per ton	.20.00@22.00
Straw, per bale	.55@70
Feed Corn Meal, per ton	.32.00
Cracked Corn, per ton	.32.00
Oil Cake Meal, per ton	.38.00
Cocoanut Meal, per ton	.25.50
Calalfa Meal, per ton	.21.00
Mealfalfa, per ton	.21.00

Citrus Markets

New York Market.

Jan. 8.—One seventy-sixes to 288s practically unchanged 80s to 150s higher in spots. Think market will be higher. Six cars of oranges were sold here today. Weather cloudy and raining.

NAVELS—	AV.
Clover, ex, ch, Redlands O G Assn	$2.65
Victoria, T I A H Ft Ex	3.10
Victoria, ex, fy, A H Ft Ex	2.80
Lincoln, ex ch, A H Ft Ex	2.55
Iris, ex. fy, D M Ft Ex	2.85
Gorget-Me-Not T C Ft Ex	2.58
Mariposa, ex, fy, C C U	3.00
Independent, fy Highland Dist.	2.95
Independent, chfi Highland Dis	2.80

Philadelphia Market.

Market is steady. Four carloads of navels and one carload of lemons sold. Weather warm.

NAVELS—	AV.
Clover, ex ch, Redlands O G Assn	2.90
Pioneer, fy, Pioneer Ft Co	2.70
Butterfly, ex, ch, Covina Ft Ex	2.60
Banner, or, Pinkham & McKevitt	2.80
Butterfly, T I Covina Ft Ex	3.05
Sentinel T C Ft Ex	2.80
LEMONS—	AV.
Visalia, fy, T C Ft Ex	3.35
Lemon Cove ch, T. C. Ft Ex	2.90

Pittsburgh Market.

The market is firm on good stock. Weather warm.

NAVELS—	AV.
Bear & Eagle fy, Lindsay Cit Assn.	2.65
Ballet, T I Sparr Ft Co.	2.25
Ballet, st S T Ft Ex	2.25
Ballet, fy, Sparr Ft Co.	2.55
Ballet, ch, S T Ft Ex	2.30
Blue Seal, fy, A C G Ft Ex	2.85
LEMONS—	AV.
Visalia, fy, T C Ft Ex	3.35
Lemon Cove, ch T C Ft Ex	3.25

St. Louis Market.

The market is weak on navels. Weather , warm and raining. Five cars sold and four on track. Floridas sold for $1.00

NAVELS—	AV.
Stearns, st C C U	2.35
Planet, ch, S S Ft Ex	2.55
Geranium, ex ch C C U	2.25
Sunset, st. S. S. Ft Ex	2.30
LEMONS—	AV.
Select, ch, S A Ft Ex	3.00
Duck, st, S A Ft Ex	2.75
Grayhound, ch, S A Ft Ex	3.00

Boston Market.

Market easier. Weather favorable. Seven cars on track.

NAVELS—	AV.
Rose, ex fy Redlands O G Assn	2.95
Bridal Viel	2.70
Bouquet, ex, fy, C C U	2.60
Signal, ex, fy, Stewart Ft Co	2.75
Gold of Ophir, ex, fy, Butte Co C A	2.90
Table Mountain B C Assn Palermo	2.85
Golden West, fy, Eclipse O A	2.75
A J H. ex ch C C U Tulare Co	2.60
Defender, ex, ch, Altland Ft Co	2.55
Forget-Me-Not ex, fy, T C Ft Ex	3.10
Overland, ex fy P H Ft Ex	2.80
LEMONS—	AV.
Select, ch, S A Ex San Dimas	3.15
Greyhound, ex, ch, S, A, Ex	3.20
Pet, ex, fy, S A Ex	3.35
Duck, st. S A Ex	2.90

Cleveland Market.

The market is steady and weather warm. It is raining. Four carloads sold.

NAVELS—	AV.
Pochahontas, fy T C Ex Zanto	2.65
Hiawatha, ch, T C Ex	2.60
Poinsetta, ex, fy, C C U	2.15
Badger, ex, ch, C C U	2.00
Royal Knight, ex, fy, R H Ft Ex	3.00
Newsboy, ex, ch, R Ft Ex	2.55
Trolley, st, R H Ft Ex	1.85

Cincinnati Market.

The market is weak. Floridas brights sold here today at from $2.25 to $2.50; Russetts at from $2.35 to $2.50. Weather, cold. Three cars on track.

NAVELS—	AV.
Brand and Grade.	
Goddess of Fruits, ex, fy, S A Ft	$2.45
Carlo San Antonio Ft Ex	1.95
Hawk, San Antonio Ft Ex	2.15
LEMONS—	AV.
Pet, ex ch, San Antonio Ft Ex	3.05
Select ch. San Antonio Ft Ex	3.15

Citrus Fruit Shipments.

LOS ANGELES, Jan. 7.—Oranges, 122 carloads; lemons, 7 carloads. Total to date this season, 2172 of which 424 cars are lemons. Total to same date season, 4277 cars of which 603 cars were lemons.

MUSHROOM SPAWN.

In mushroom growing one of the first requisites is that of securing a fresh, reliable spawn. This material is easily injured be even a short period of storage under improper conditions. In the past, small growers have suffered most, as they frequently purchase any spawn which is on the market.

The process of making mushroom spawn, or of spawn manufacture, as is is commonly termed, has unfortunately received very little attention in this country until recently. Nearly all of the mushroom spawn sold in the American market has been imported. Most of this is grown in England and is put up in the form of bricks or cakes, each brick being about 5½ by 8 1-4 by 1 1-4 inches and weighing from 1 1-8 to 1 1-4 pounds. This brick spawn is frequently spoken of merely as English spawn for the reason that the English article is all put up in this form. The making of brick spawn is not usually practiced by the French growers, who use instead a flake spawn. The explanation of this fact may be that a large number of French growers make their own spawn and the brick method is of course more laborious. The flake spawn consists merely of the loose composted material, equivalent to the ordinary bedding material, through which the mycelium of the fungus has grown abundantly. The brick spawn is very compact and easily handled; and, from the experiments which have been made with the introduction of spawns of various kinds, it would seem to be established that the brick spawn is better fitted to resist the conditions of shipment and subsequent storage. We have, therefore, the curious fact that, although mushroom growing is perfected to the highest degree in France, very little of our imported mushrooms spawn come from that country.

Again, the brick spawn sells at a lowed figure than the flake spawn grown by the French. Good flake spawn is, however, such a dense mass of mycelium that as a rule less is required in spawning.

Apples With Meringue.

Pare and core large, tart apples, place in a pudding pan, fill in the cavities and intervening spaces with sugar—a cupful to six apples—put a lump of butter on top of each apple, add one-third of a cupful of water and bake. Beat the whites of two eggs stiff, add two tablespoonfuls of sugar. Add a spoonful to the top of each apple and brown in the oven.

Queries and Replies

Eucalypts.

Having read the article in issue of December 27 on the different species of Eucalyptus, I feel especially interested in two species, the rudis and rostrata or red gums, as they seem to withstand frosts and do well in alkali soil. In your opinion, would they do well in Los Nietos valley. Last spring I set out 500 blue gums and I think the freezes of this winter have killed nearly of them. If any one can inform me as to where I can get seed of these two varieties, please let me know personally or through the Cultivator, as I would like to put out several acres this spring.—C. R. GREGG, Downey.

The two red gums, E. rostrata and E. tereticornis as well as E. rudis will do very well in your section. Any seed store or nursery advertising with the Cultivator will furnish you with seeds or trees of the above species.

Eucalypt Fence Posts.

Could you inform me what is the best Eucalyptus to grow for fence posts in Riverside county? I have read the articles appearing in the Cultivator with a great deal of interest.—L. L. W., Winchester.

The Sugar Gum, E. corynocalyx, makes the best fence posts unless grown where it may obtain too much water. It is the most drought resistant of all and when grown under arid conditions makes an ideal fence post.

Planting Vineyard.

How far apart is it best to set Zinfandel and Thompson seedless grapes, ten acres of each. If set, say, eight feet each way, should there be an avenue left occasionally? When would you set out rooted vines, now or later? If these don't take up too much room, would thank you very much for an answer through the Cultivator.—D. F. C., Modesto.

The usual distance for planting vine grapes is eight by ten. Thompson seedless vines are usually planted ten by twelve or even wider, as the heavy top growth is staked up and in the way when the spaces are narrow. At every twentieth or twenty-fifth row omit one row for the avenues. The ground should be plowed at once and then let lay idle until March. The weed seeds will germinate and when plowed under the first of March are greatly lessened. Plow the first week in March and harrow the ground fine and smooth, then plant the young vines. Irrigate them in May, and if possible again in late July or first of August. Keep the cultivators going to make a good dust mulch. Use for this purpose a cultivator that has straight teeth that will loosen the soil without turning it over.—M. E. S.

Seed Warts.

I have a five-year-old gelding that has developed a seed wart under his eye. It does not grow, but disfigures the horse. What shall I do with it?—L. B. R., Arbuckle.

We would advise you to consult a veterinarian. If the wart were anywhere except near the eye we would advise leaving it alone. It might go away of its own accord. A strong solution of formaldehyde put on the seed wart will burn it off, but in your case there is danger of burning the eye, so I would suggest that you show the wart to a good veterinarian.

Skin Disease.

What will cure my cow of a skin disease. The hair comes off; the skin gets red and sometimes bleeds.—J. R. S., Santa Clara.

Your cow has blood and skin trouble. Give one tablespoonful of the following, night and morning in feed: Granulated hyposulphite soda, enough to make one pint, mix. Bathe the parts two times daily with following solution: Bicarbonate potash two ounces, carbolic acid one dram, water enough to make one quart, mix.

Warts On Bag.

I should be glad to ask your valuable advice about several points, hoping not to take up too much of your valuable space.

1. My cow gives plenty of good milk, but her bag has had succession of lumps which gather and break, also small warts come on the teats and one teat has a hard lump at the end inside of one. What shall I do?.—A. K. S. Imperial.

If this cow is not very valuable I should dry her off and beef her, the gathering in the udder is not conducive to good wholesome milk, and if the milk was examined under a microscope, it would be apt to show puss and leucocytes. For warts on the teats, use butter of antimony, or castor oil applying it with a small brush after each milking. The hard lump in a teat is difficult to treat, except by cutting and this requires careful work. Now the best thing to do with this cow is to make a careful study and find out if the udder came into this condition from cold, from rough milking or from leaving some milk behind or from irregularity in the time of milking? Learning by failures to do better each time and avoid many of the troubles instead of having to stumble over them.—M. E. S.

Look After This Bull.

I have three cows and two heifers that I cannot get with calf. They have been served about six times and are still coming back. Bull runs with cows but take them up soon as served.

Is it a disease among cows? If so please give remedy, and oblige—Subscriber,—Turlock.

First of all I would take up the bull and feed him some grain, he will be surer. Then it is poor policy to allow him to be running with the cows all the time. When the heifers are discovered to be in heat, they can be treated with the yeast. Take a cupful of the home-made yeast, or take one the common commercial yeast cakes, put it in into a pint and a half of tepid water, keep in a warm place ten hours, then wash out the cow and inject the yeast, after twelve hours serve her and place her in a quiet stall where she will not move around for ten or twelve hours more. We have not failed as yet to catch the misses in the herd with this simple treatment.—M. E. S.

Testing Milk—Stock Melons.

I would like to ask first, which you think is the fairest way of testing milk, by a ten-day composite test or by testing everyday, second, if you know whether stock melons are of any value for butter fat for cows?

The composite test is the simplest way to do it. The fairness of the test consists in always adding exactly the same amount of milk to the composite test, for this purpose after taking a sample from the pail I use a small two dram glass and add that amount of milk to the sample. Stock melons are succulent and increase the milk flow considerably we find. They will help to hold the cows up in their milk. In themselves they are not of great food value, being nearly all water and a little sugar.—M. E. S.

Coughing Pigs.

I have a bunch of young hogs that are coughing. Please advise me what to give.—S. B. B. Calexico.

The probabilities are this cough is due to worms. Turpentine is as good a remedy as I know of for same. Give once daily for three days in succession. Then give the pig one ounce salts, then follow up with half teaspoonful granulated hyposulphite soda once daily.

Worms.

Please tell me what will cure worms in a horse?—C. R. I., Imperial.

Starve horse for twenty-four hours, then give two drams santonin, two ounces turpentine, and one pint raw linseed oil. After giving this dose, then give a sloppy bran mash, six hours later a little hay may be given but feed sparingly until bowels are purged.

Trap Nests.

Having concluded there is very much to be be gained by trap-nesting the hens, I write to ask you of there is any make of trap nests that are operated automaticly?

I examined a trap nest today which had to be set for every hen that went into the box, and worst of all the hen had to be released by hand. Is there not someway to have those nests made so they close the entrance door and open the one for exit when the hen is on the nest. When the hen leaves the nest, the entrance door is raised and the exit closed. It seems to me there ought to be some way to have these nests made so one does not have to look after them so closely.

I should like very much to know your ideas on this, and if there is such a device, where can it be purchased. Now I have an idea again that it might be a better plan to trap each hen separately. That is, one hen in one nest. If an egg is found in nest remove the hen and set the nest again Should the hen leave the nest and no egg was found, put her back in the and give her another chance. How many times do the hens need to pass through these nests. Please answer in the next issue of the Cultivator and oblige. E. B. W. ORANGE.

There is a great deal to be learned by the use of trap nest. The plan of having a nest that will have an exit into another pen has been talked of by several, but I do not know of any yet perfected.

Of course by this plan you could only know the hens that laid that day, you could not tell which hen laid each egg, also I have found hens that would go on a nest, remain there for a time and then come off with out laying any egg. This you could not discover if the hens could release themselves. Consequently it is better to release each hen separately, pencil on her egg her name and the date. This takes less time than you would imagine. I have found that by having one trap nest for every three hens I need only visit the nests twice in the mornings.

Apples For Poultry.

Would you kindly inform me in the Cultivator, whether it would be of any benefit to feed small apples to poultry. I have a lot of small and scabby apples, which I would like to feed them. How many can I feed safely to 100 hens daily? C. B. S. FRUITLAND.

Apples are usually good food for hens, and can be thrown down for them to eat as much as they like. but I do not know about scabby apples.

Would you feed them to a cow?

If the scab is of fungoid growth it might be very bad for hens, but they can usually eat anything that a cow can eat.

Lame Duck.

Can you tell what to do for my Indian Runner duck? He has bumps on the side of his toes that resemble warts, and he is so lame he can hardly walk, after he falls down. He was brought from a farm where there was running water. I have used a trough. Kindly advise me what to do. Mrs. S. S. BALLARD.

Your duck has injured his feet on stoney ground. You had better pare the corns carefully and give him a good bedding of straw. If the feet are you can keep it on by putting a childs sock over will relieve it, and when he gets better I would advise you to kill and eat him, as the corns are almost certain to return.

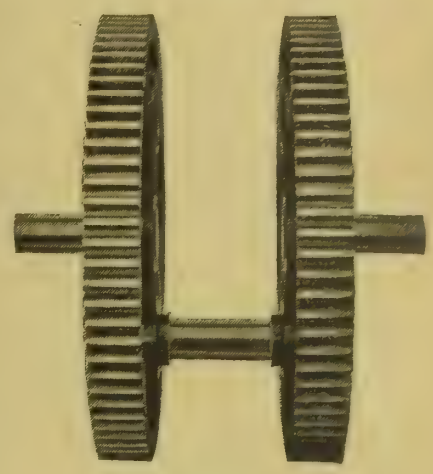
WOOD OF FRUIT TREES.

In the young tree the pith serves a useful purpose, when it holds a considerable amount of moisture, but in older trees it becomes more or less shriveled up, and so far as helping the tree in its growth is concerned, it does nothing.

The heart-wood of the tree is valuable only in strengthening the trunk. There is no life in it; the cells of which it is composed are dead. It contains, besides, a considerable amount of moisture, and when it once starts to decay it rots quite rapidly, resulting in the hollow trunks so frequently to be seen in forest, shade and fruit trees.

In the sap-wood, moisture and food are carried from the soil to the top of the tree and the cells of which the sap-wood is composed are alive and more or less active. When, for any reason, the sap-wood has been killed, it decays very rapidly.

The Pomona Pumps



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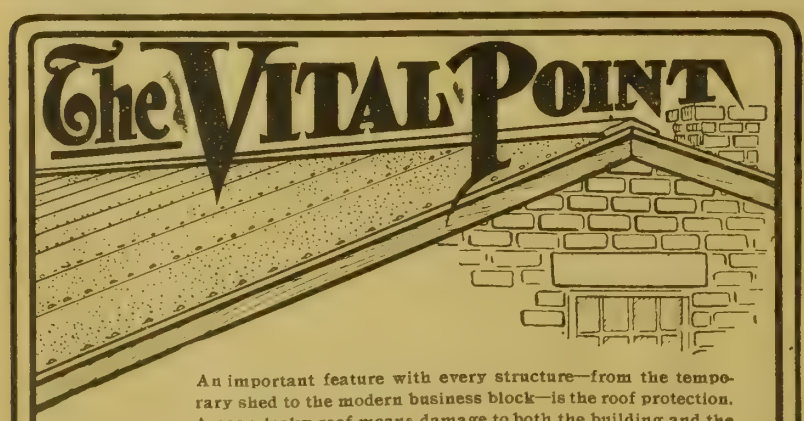
The VITAL POINT



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It will fit any ordinary Lamp.
For sale by all dealers.
If your dealer does not have them, send his name with the price, viz, 20 cents for No. 1 size or 25 cents for No. 2 size and we will mail you one, postage paid, which you may use ten days. **If not then satisfied with it, return it to us and we will refund your money.**
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Household Department

If

If I could only serve him,
How sweet this life would be!
Last night I dreamed my darling,
Alive, returned to me.

I brought him from the cupboard
The things he liked to eat—
The little piece of honey,
The rye bread and the meat.

I sang the song he asked for
The night he went away.
How was it, when I loved him,
I could have said him nay?

I took the time to please him,
With hand upon his brow,
Amid the awful leisure;
There was no hurry now.

How strange I once denied him
What took so little while!
A kiss would seem so simple,
So slight a thing a smile!

With pleased sweet looks of wonder
He took what I could give—
Such words as we deny them
Only because they live.

The pale light of the morning
Shone in upon the wall.
Come back to me, my darling,
And I will give you all!

—[McClure's.

A Matter of Compatibility

IN magnetism there are attractive and repellent currents which, though invisible, are none the less forcible. Just so there are attractive and repellent forces in people which are not only invisible, but are only brought out under certain conditions.

A man stepped into a restaurant in South Dakota and, looking about for a table, saw another man eating his supper whom he approached.

"Hello, Smith!" he said. "What are you doing here?"

"Hello, Runlet!" said the other. "Sit down."

Runlet sat down, and the two compared notes as to what had happened since they had last met several years before. Then Runlet said:

"But you haven't answered my question."

"Well, since you are an old chum and I am pining for a confidant, I'll tell you. Five years ago I married a girl who promised to make me the best kind of wife. She had apparently everything to render her lovable. We married and on the honeymoon quarreled. That wasn't the worst of it. We kept on quarreling. In my treatment of her there was nothing I had not used toward other women without antagonizing them—and I was obliged to conclude that she had a bad disposition. I think she came to the same conclusion of me, and after many efforts on the part of both of us to reform our dispositions we finally agreed to separate. It was arranged between us that I should come out here and get a divorce."

Runlet listened to this with marked attention, and it appeared to have considerable influence over him.

"They say," he replied, after some thought, "that matrimony is something half the world is trying to get into and the other half is trying to get out of. For a year I've been hunting a woman I wish to marry. I met her last summer on a train between Chicago and San Francisco, and we fell in love with each other on the journey. When I admitted my part of it she turned pale and told me that those were the only words of love that must ever be spoken between us. She wouldn't tell me why or give me any information concerning herself. Had I known when we parted that I could get no rest without her I would never have lost sight of her."

"I hope," said Smith, "that you will find your love and be happy with her. For me, I am only anxious to be free, and when free I shall remain so."

Neither converted the other to his way of thinking. Runlet left the next day, and Smith a week later secured his divorce. He did not see his wife again and in a year lost track of her. They had no children to continue between them either a pleasant or unpleasant interest. They had come together as two ships passing at sea and after a brief tarry together had passed on with as little interest in each other as when they had first met.

Five years after the meeting of Smith and Runlet in a South Dakota restaurant they met again. This time it was in a corridor of a hotel. Runlet espied his friend and, advancing cheerfully, put out his hand.

"Did you ever find your first love?" asked the other after the first greetings.

"Indeed I did, or, rather, she found me. Not long after I parted with you I received a message from her. I wondered how she knew my name and address and discovered later that she had seen it on my trunk while we were traveling together. I went to see her. She withdrew her objections to our union, and we were married."

"And happiness followed the honeymoon?"

"Like a never setting tide. We are happier every day."

"To what do you attribute such happiness?"

"Carlyle says that genius is unconscious. It is so with love. We don't consider why we are happy together. I sometimes think we don't realize that we are happy. But when we are parted we are miserable."

"That woman must be a jewel."

"She is. Come and see for yourself. I shall expect you to dine with us this evening."

Runlet gave his address, and his friend promised to be on hand.

When Smith called, Runlet was at the telephone and asked Mrs. Runlet to go down and receive the guest, excusing him till he should have finished at the phone. When he went down Smith and Mrs. Runlet were sitting talking in a constrained manner natural under the circumstances. Runlet, to make them more easy, introduced them, speaking words of praise for both. They soon went in to dinner, where Runlet recounted at the table the story of his and Smith's meeting some five years before. Then he went on to say:

"Mr. Smith, my dear, was not so fortunate as I in his matrimonial affairs. Pardon me, old man. I know my wife will sympathize with you. I know, my dear, Mr. Smith to be one of the best men in the world. Any woman who couldn't make him happy is not good enough for him or for any good man."

After dinner Smith pleaded an engagement and hurried away. Runlet joined his wife in her boudoir and found her on a sofa with a bottle of salts to her nose, which she was sniffing between gasps.

"For heaven's sake, my dear, what's the matter?'

"He was my husband!"

NELSON MAXWELL.

A LIBRARY BOOK'S PLEA.

Once on a time a library book was overheard talking to a little boy who had just borrowed it. The words seemed worth recording, and here they are:

"Please don't handle me with dirty hands. I should feel ashamed to be seen when the next little boy borrowed me.

"Or leave marks on me with your pen or pencil. It would spoil my looks. Or lean on me with your elbows when you are reading me. It hurts.

"Or open me and lay me face down on the table. You wouldn't like to be treated so.

"Or put in between my leaves a pencil or anything thicker than a single sheet of thin paper. It would strain my back.

"Whenever you are through reading me, if you are afraid of losing your place, don't turn down the corner of one of my leaves, but have a neat little bookmark to put in where you stopped; and then lay me down on my side, so that I can have a good, comfortable rest.

"Remember that I want to visit a great many other little boys after you are throught with me. Besides, I may meet you again some day, and you would be sorry to see me looking old and torn and soiled. Help me to keep fresh and clean, and I will help you to be happy."—[Rev. Henry D. Maxson.

WALK RIGHT.

Never allow your physical standard to drop. Keep up your energy; walk as if you were somebody and were going to do something worth while in this world, so that even a stranger will note your bearing and mark your superiority. If you have fallen into a habit of walking in a listless, indolent way, turn right about face at once and make a change. You don't want to shuffle along like the failures we often see sitting around on park benches, or lolling about the streets, with their hands in their pockets, or haunting intelligence offices, wondering why fate has been so hard with them. You don't want to give people the impression that you are discouraged, or that you are already falling to the rear.

Straighten up, then; Stand erect! Be a man! You are child of the Infinite King. You have royal blood in your veins. Emphasize it by your bearing. A man who is conscious of his kinship with God, and of his power, and who believes thoroughly in himself, walks with a firm, vigorous step, with his head erect, his chin in, his shoulders thrown back and down, and his chest well projected in order to give a large lung capacity; he is the man who does things.

You cannot aspire, or accomplish great or noble things so long as you assume the attitude and bearing of a coward or weakling. If you would be noble and do noble things, you must look up. You were made to look upward and to walk upright, not to look down or to stumble along in a semi-horizontal position. Put character, dignity, nobility into your walk.—[Success.

"Riches are intended for the comfort of life, and not life for the purpose of hoarding riches. I asked a wise man, saying, "Who is the successful man, and who is the unsuccessful?" He said "That man was successful who spent and gave away, and that man unsuccessful who died and left behind."—[Sa'di.

THE CARE OF THE EYES.

People who recognize the importance of taking care of their health often quite forget that if we want to preserve them it is just as necessary to take care of our eyes.

First of all take care of your general health. Poor health often leads indirectly to various eye troubles.

Glare and gloom are equally bad to work in. You need not ask which is the worse for the eyes—one is as bad as the other.

The light should fall on book or work from behind us. The attitude while at work is of great importance. The head should, as far as possible, be kept erect. Stooping causes an increased flow of blood to the head and eyes—this is injurious to them.

Dont' read when traveling. Deny yourself this pleasure for the sake of your eyes.

THREE CARROT WAYS.

Carrot Pie: This can hardly be told from squash pie. Scrape and boil the carrots until tender, using plenty of water. When done, drain and pour cold water over them. Let stand five minutes, then mash. To make good-sized pie use 1 cup carrot, 1 pint milk, 4 tablespoons white sugar, ½ teaspoon each salt, cinnamon and ginger and 1 well-beaten egg. Bake slowly, using one crust.

Roast Carrots: Scald the carrots until the skin can be removed, then place them in a pan with a roast of beef or pork. Turn them once in a while and baste when you do the meat.

Mashed Carrots: Boil until tender, put through a vegetable squeezer, and add butter, pepper and salt. Stir over the fire until hot, then serve at once. This is a good substitute for squash.

ALMOND CREAM SAUCE.

2 tablespoonfuls almond paste.
Juice 1 large orange.
4 tablespoonfuls cream.
1 cupful boiling water.
3 tablespoonfuls sugar.
1½ tablespoonful cornstarch.

Take one one-fourth of a cupful of the water to mix with the almond paste, mashing and stirring until smooth, then turn it into the boiling water and add also the sugar and cornstarch, which have been well blended. Stir until the sauce boils and thickens. Add the orange juice and cream a moment before serving.

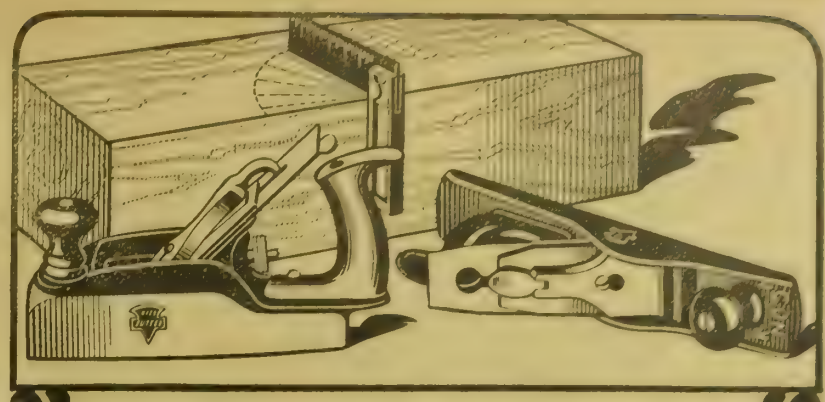
ALHAMBRA BONBONS.

½ cupful blanched almonds.
1-4 cupful seeded raisins.
1 to 1 1-2 teaspoonful honey or maple syrup.

Run the almonds and raisins together through a meat chopper, putting through twice, if necessary, to secure a fine-grained mixture. Stir in the honey or maple syrup, a little at a time, using barely enough to make a paste that can be shaped into small balls. When these are made out, roll them in a mixture of granulated sugar and ground cinnamon, or, if something more elaborate be desired, roll them in blanched almonds chopped moderately fine. They also make a delicious filling, placed between halves of English walnuts in the manner of creamed walnuts.

Freddie—What's a hobby, dad?
Cobwigger—A hobby, my boy, is hard work that doesn't pay anything.

Piles Cured In 6 To 14 Days.
PAZO OINTMENT is guaranteed to cure any case of Itching, Blind, Bleeding or Protruding Piles in 6 to 14 days or money refunded. 50 cents.



True Tools

You can't square up a block with a lop-sided plane—saw straight with a buckled saw or bore a clean hole with worn-out bit. To do a good job you must have good tools. That's the reason men who have used and studied tools a lifetime insist on having

KEEN KUTTER

QUALITY TOOLS

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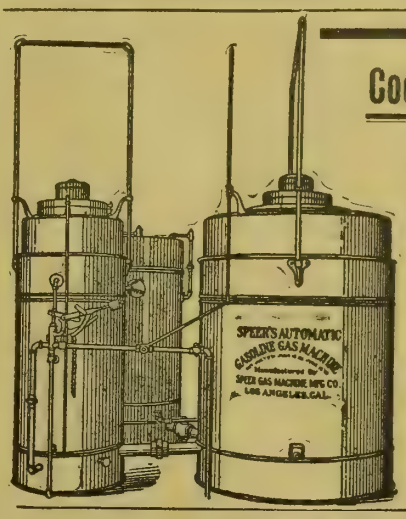

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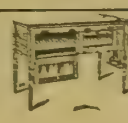

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PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. 10 YEARS GUARANTEE
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The "ADDISON" pumps more water for the amount of power consumed and with less liability of breakdown than any other pump.

With the recent changes in the factory and management we are prepared to make quicker delivery, and a better pump for less money than ever before.

It will pay you to write us for catalogue and prices before purchasing a pump.

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FOR SALE—WHITE PLYMOUTH ROCK Cockerels, Fishel strain. Some fine ones, $2 and up. P. M. Young, Lawndale, Cal.

WANTED—HIMALAYA BLACKBERRY, McDowd Berry and Longworth Strawberry Plants. Give Price and all particulars. Address Lock Box 64, Gridley, Cal.

BUFF LEGHORN COCKERELS FOR SALE. Also some Black Minorca pullets. Sell to make room. Mrs. H. J. Warrick, Corning, Cal.

COLUMBIAN WYANDOTTES, THE FANCY and Utility Fowl. Eggs and stock for sale. Eggs from Pen No. 1, headed by First Prize Cock at late Los Angeles show, $5 for 13; No. 2, $3. Also Black Tailed Japanese Bantams, $4 per 13. Frank J. Ironmonger, Hollywood, Cal.

FOR SALE—WHITE WYANDOTTES, SILVER Cup Winners at late show. Choice Stock for sale. Eggs, $2 per setting, $10 per 100. Mrs. Mary Van Brunt, Avery and Benefit Sts., Hollywood, Cal.

VICTORY POULTRY RANCH—WON AT LOS Angeles, January, 1907, Thirteen Prizes on Sixteen Entries, also Meserve Silver Cup on Best Pair of Pekin Ducks. Orpingtons, Buff, Black, White; R. I. Reds; Pekin and Buff Orpington Ducks. Sure winners, great layers, rapid growers, top market quality. We guarantee satisfaction. Write us today. Goodacre Bros., Box 45, Compton, Cal.

SEED POTATOES WANTED, EITHER Early Rose or Triumph, by Francis Heinz, Brawley, Cal.

GREENLEAF'S RHODE ISLAND REDS—Winners at great Chutes Show, 1907. Special Silver Cup for best Pen, 1st Hen, 2nd Cock, 4th Pen, 3rd Pullet and Special for Best Shaped Hen, in strongest competition ever seen on the Coast. Eggs, $3 per 15, $5 per 30. W. Frank Greenleaf, 2010 Greenleaf Avenue, Santa Ana, Cal.

FOR SALE—BARRED ROCKS, WINNERS OF 11 prizes and Silver Cup for Best Barred Rock Male at Breeders Show, 1907. Some choice cockerels for sale. Eggs. Write your wants. Frederick Espe, 4425 So. Main St., Los Angeles, Cal.

SPARR'S JAPAN COFFEE—YOU AND YOUR friends are offered an opportunity to buy the finest drinking coffee grown, price 25 cents per lb., packed in 5-lb cans, one dozen in case, 60 lbs., freight prepaid. This is about two-thirds of the usual price charged for ordinary coffee. Send $2.80 for 10-lb. can. Liberal sample sent by mail on receipt of 4 cents postage. F. W. Sparr, 114 East Market St., Los Angeles, Cal.

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FOR SALE—THRIFTY YOUNG WALNUT Trees from 5 to 8 feet tall, grown from selected soft shell nuts, $25 per hundred. A. M. Hoel, Goleta, Santa Barbara County, Cal.

AGRICULTURAL EDUCATION.

(Continued from Page 27.)

for yourself on every hand. Scientific agriculture is simply the aiding of nature to carry out her plans. It is simply a thorough investigation of nature's laws. Disobey one of them and suffering is the inevitable result.

The time has come when it is no longer the man that arises with the first faint streak of dawn and labors until day has turned to night that is the successful agriculturist. It is no longer the man who can work the longest hours and do the hardest work that prospers, but rather the man that has been trained for his agricultural pursuits, the man that thinks, the man that spends a few minutes in the morning planning for the day's employment, the man that studies, experiments, and investigates, and when once having determined upon a conclusion, follows it with all his might, he it is that is the successful farmer and can live to enjoy the fruits of his labors.

SALTING ASPARAGUS BEDS.

While good asparagus, as is well known, may be grown without applications of salt, it is possible that on asparagus soils, soils of the sandy type, still better asparagus might be grown with it. It is certain that in the usual quantities it does no harm to the asparagus on such soils. It is known to have a binding or compacting effect on lighter soils, and tends to improve capillarity, while, owing to its hygroscopic character it tends directly to increase the moisture in the soil. Even if impracticable under present methods to use salt in the large quantities needed to secure its effect, it is certain that under the old time method of growing asparagus it was well nigh a necessity and answers a good purpose still where asparagus is planted closely in beds. Planted thickly, as was the custom, it was almost impossible to keep the bed clear of weeds by any other method. The large quantities of stable manure used annually brought a fresh supply of weed seeds, especially grasses, rendering hand work tedious and expensive. Salting proved an efficient, cheap and harmless substitute.

The writer has used asparagus along division and back fences where it serves the double purpose of ornament and use. It softens and hides the obtrusive division fence, with its airy growth proving indeed ornamental. It occupies ground that is often not otherwise occupied and at the same time such plantings can be made to furnish a family supply of a delicous vegetable. It is true that with the attention usually given the product is not comparable to the truckers' product, but a very fair article may be so grown and as it is for home consumption its smaller size is not seriously in the way. Here salting again answers a good purpose; waste brines may be put to use. This combination of utility and ornament in many instances is not desirable, but here we have one in which ordinary objections hardly apply.

THE SUCCESSFUL FARMER.

Ever and anon we hear of the successful farmer and in imagination we wander away to broad, well-tilled acres, large red barns, large houses with beautiful lawns, fine stock, etc., but we do not stop to consider the enormous amount of real hard work that was entailed in bringing about this condition of things. There are no hard and fast rules whereby success can be assured in this great profession, but there are certain principles that make for success, and to these the following bear loyal tribute:

I shall name a few elements which a farmer cannot well do without to be successful. Make farming a specialty. I have been farming for twenty years, and I never have found much time to devote to any other profession. I have stuck close to agriculture and stock raising, and I think I have been rewarded for it. I well remember when I was a small boy, of hearing the saying "Jack of all trades and master of none." Ever since I have kept that in mind. I would rather be a special somebody than a general nobody. The different sciences are so deep and wide that one person cannot master all of them, or even many of them.

A successful teacher makes teaching a specialty, a successful lawyer makes the legal profession a specialty. I know there are some good farmers who are lawyers, good teachers who are farmers, and good farmers who are doctors, but if you should ask them if they thought that they would not be more successful if they should make their profession a specialty, they would tell you yes. The most successful men we have today in any profession are specialists.

Many times since I have been farming, other things have been presented to me, with offers of good wages, but I could not spare the time off the farm, which needed my undivided attention. The right thing needed to be done right at the right time, which if I failed to do, and do well, my work was not satisfactory to myself. I believe the keynote to success in farming is to do the right thing at the proper time. I have never well done anything but that I was well rewarded and well pleased with my work.

PLANTING CUCUMBERS.

There are almost as many methods of planting cucumbers as there are growers. Some plant them in hills the standard distance of 6 feet apart each way; others plant in hills 6 feet apart in one direction and 2 or 3 feet apart in the row, while others plant in drills or broad belts 6 feet apart and chop out the plants to stand about a foot apart in the row after all danger from insect depredation has ceased. The methods which seem most economical under the conditions at hand will of course be adopted by the grower.

Don't be afraid of overfeeding; find out how much your fowls need. There has been a lot of underfeeding of late on account of this cry of overfeeding in the press.—American Poultry Journal.

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Superior to all one-cylinder engines. Revolutionizing gas power. Costs Less to Buy and Less to Run. Quickly, easily started. No vibration. Can be mounted on any wagon at small cost. Portable, stationary or traction; 5, 7, 10 and 15 horsepower engines in stock at Oakland. Mention this paper. Send for Catalogue. THE TEMPLE ENGINE CO. Mfrs., David Rutherford Agt., 1306 Harrison St., Oakland Cal. This is our 53d year

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SAVES WATER, GRADING AND TIME

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632 Pacific Electric Building Los Angeles, California

California Horticulturally

By JOHN ISAAC, Sacramento, California

The Fruit Grower and the Chinese

THE late Fruit Growers' Convention at Hanford, was one of the best ever held in the State. It fairly well attended, and some remarkably good papers were presented. A resolution advocating the virtual repeal of the anti-Chinese law came as a thunder-clap to very many people in the State, but those engaged in orchard work or other agricultural pursuits can thoroughly understand and sympathize with the advocates of this resolution. The fact is that we have scoured the United State for good farm labor and we have emptied the schools during the picking and packing season and have sent our emissaries all through the East to induce young men to come to California hoping that the superior wages offered here would secure them. But each year has shown a lessening among the number of workers until today a very large percentage of our fruit and farm crops are absolutely lost for lack of sufficient help to harvest it. It has been found impossible to secure white labor of any account in sufficient quantities, and our growers have turned to the Japanese for assistance only to find them thoroughly unreliable and following the example of many of their white brethren, abandoning their employment as soon as they see that their employer is in a pinch. It has practically come to the stage now where the agfiriculturist must have Oriental labor or curtail the work on the farm to the capacity of his own family. It is very quesionable whether any one of the members of the Fruit Growers' Convention who voted for these resolutions is favorable to the introducing of coolie labor, but it has become with them a "dernier" resort, it is that or nothing; available help or bankruptcy.

RICE CULTURE.

We notice that another effort is being made in the line of producing rice in the Sacramento Valley. Several attempts have already been made in this direction but have failed, for some unknown reason, probably lack of knowledge or skill. There is no reason why vast areas in California, both in the Sacramento and San Joaquin Valleys, should not be cultivated to this desirable cereal. The conditions are all but perfect in soil, climate and abundant water supply. We are now importing immense quantities of rice from China, Japan, Hawaii, and also from the Southern States. It might be produced at home and add very largely to our agricultural wealth. With the steadily advancing cost of living, especially in meats, the masses of the people will naturally turn to other classes of food, and we know of none so completely filling all requirements as does rice, and we know no section better adapted to its culture than Northern California. We shall watch this experiment with much interest, and trust that it may be successful, and the means of introducing a new and profitable industry to the farmers of California.

NEW METHOD WITH PRUNE.

One of the papers which aroused most interest at the Fruit Growers' Convention was by J. Luther Bowers of Santa Clara, on "A Fixed Price for Prunes and How to Obtain It." Mr. Bowers has been experimenting with a process of his own for canning cured prunes so that they will keep for an indefinite time and always in good condition. They are put up in available packages and at moderate prices, but sufficient to insure the grower a fair profit. Lack of sufficient means has prevented Mr. Bowers from introducing his process on a large scale, but after hearing his paper and examining his fruit, the convention passed a resolution endorsing the same, and providing for the appointment of a committee to take up the work with him and endeavor to extend our markets. It is not improbable that the outcome of this will be some organization that will put up prunes by the Bowers plan, on a large scale, and introduce them into the markets of the East and Europe. There are two things required in the sale of any article, first, that it must be meritorious; and secondly, that it be made known. We have spent much time in advertising the prunes of California, but very much of the product put up in boxes or bags, when delivered to the trade was utterly valueless and hence all the advertising was worthless. If, however, we can put up a good article and then force it upon the public, it is not improbable that it may be made a household necessity, and prune growers will never have to face a deficit in their business.

HORTICULTURE ORDINANCES.

There is an assortment of county ordinances pertaining to horticulture in the different counties and the State, some of them going so far as to absolutely prohibit the importation of certain plants or vines within the counties. It has been charged that measures of this kind are unconstitutional and will not stand the test of the courts, but the horticultural commissioners will enforce them until they have been threshed out before the proper authorities.

The latest in this line is an ordinance passed by Yuba county, which, among other provisions, prohibits importation of any grape vines into that county unless accompanied by a certificate from the Horticultural Commissioner to the effect that there has been no Phylloxera or Anaheim disease existant in the county from which they are imported for at least five years preceding the date of importation. This practically puts an embargo on the importation of vines into that county from outside points, as it is exceedingly doubtful whether any one in the State could issue a certificate to that effect. No one knows positively that either the Phylloxera or the Anaheim is, or has been absent from any county in the State for the past five years, and therefore could not make a certificate to that effect.

The question of winter egg productio is of vital importance to every poultry raiser. You want eggs for market when the price is highest; you want eggs when eggs are still scarce for early hatching. If the hen is kept in proper working order and is given the proper materials with which to make eggs, she can't help laying, even should she want to help it. If you comply with these two things, you'll have eggs in abundance all winter long.

SELLING POULTRY PRODUCTS.

Those who know how to produce "fancy" eggs and other poultry products are the ones who reap the richest harvest in this line of business, for in this case a high class trade may be built up in a short time with but little effort on the part of the producer.

Keep pure-bred fowls so that the eggs will be nearly uniform in size and color. The food consumed by the laying hens has a great deal to do with the size of the eggs; if it is not rich enough in albumen the eggs will be small. A strictly fancy egg must be large; not less than two ounces in weight, new laid, spotlessly clean and free from any foreign flavor due to improper feeding. No tainted meat scraps, musty grain or strong-flavored vegetables, such as cabbage or onions, should be fed to hens which are catering to the tastes of the wealthy consumer.

To secure and hold this high class trade is not at all difficult, for quality sells itself and "a satisfied customer is the best advertisement." A high grade product put up in an attractive package is what the critical buyer wants. If the package is even a trifle dilapidated it is at once taken for granted that the contents are inferior. This applies particularly to packages shipped to the consumer.

Farmers and poultrymen living near large cities should endeavor to build up a retail trade among the wealthy class, who are willing to pay a little above market price for fresh eggs, dressed fowls, etc. Be careful that all eggs sold are fresh, i. e., not over a week old. Therefore, it is never advisible to depend upon neighbors to supply one's customers at times when eggs are scarce. Unless one is reasonably sure of a good supply of eggs from his own flock during the fall and winter months, it is folly to undertake to build up a fancy trade or to sell to retail customers.

One Way of Selling.

A good way of disposing of poultry products is to furnish reliable commission merchants and grocers with fresh eggs and choice broilers. Each egg must be stamped with the producer's name and each dressed fowl tied with a colored cord around the body to hold it in shape. A small tab with the poultryman's name should be attached. For stamping the eggs a small rubber stamp is used. An egg bearing the words, 'Gordon's Fresh Eggs," is sure to be good, because this is the "brand that won't come off," and the buyer knows that the producer would not dare to risk selling an egg of doubtful age. Therefore the buyer never has to wonder what the quality of 'Gordon's Fresh Eggs" is going to be. When the grocer is asked, "What are eggs worth?" he replies, 'Eggs 20 cents; fresh eggs 24 cents; eggs from Gordon's 28 cents." When inquiries are made for broilers in early spring, the grocer invites his customer to see what he has in this line and of course the customer selects Gordon's though the price is from 4 to 8 cents higher than that of the others.

To make a demand for strictly fresh eggs or nicely dressed fowls is not beyond the reach of any progressive person. Of course, after the quality once becomes known, practically the demand makes itself. Then one should bear in mind that the quality of the product must never get below the standard. Those who live close to cities or large towns should lose no time in building up a trade along these lines.—Cor. in The Home Monthly.

THE TOMATO.

Since the prejudice in regard to the poisonous qualities of the fruit has broken down and improved canning processes have come into use the tomato has become a very important commercial field and garden crop. It is a fruit which, as before stated, has no definite season. It is relished at all periods of the year in a fresh state, and is equally welcomed upon the table, when properly cooked or prepared, whether it has been freshly taken from the vines or has been preserved in cans As a result of the extensive use of the tomato it is now cultivated both as a field and as a forced crop, though little is done in glass grown tomatoes in California. In field culture, however, the acreage is being double each successive season.

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The Highest Quality Money Can Buy

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Send for Our Catalogue, Ready January 20

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I have Twenty-Five Thousand Early Cuthbert Raspberry Plants to sell at Six Dollars per Thousand.

L. D. Woodworth, Covina, Cal.

San Fernando Valley Nursery

Walnuts, Grafted and Seedling
Raspberries, Strawberries
Blackberries

G. Tosetti, Lankershim, Formerly known as Toluca Cal.

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GAS, DISTILLATE OR ALCOHOL ENGINES
Highest Awards in California State Fair and Arizona Territorial Fair. Write for Catalogue.
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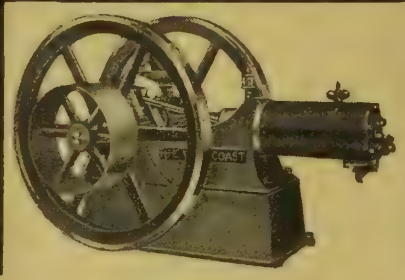

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Are very simple in construction, run smooth, start easily and the best engine on the market.
Pumping Plants and Mining Hoists
That are right in construction and price. Estimates furnished on complete plants installed. references given on application. Call or write for catalogue.
Ward Bros., 205-207 N. Los Angeles St., Los Angeles, Cal.

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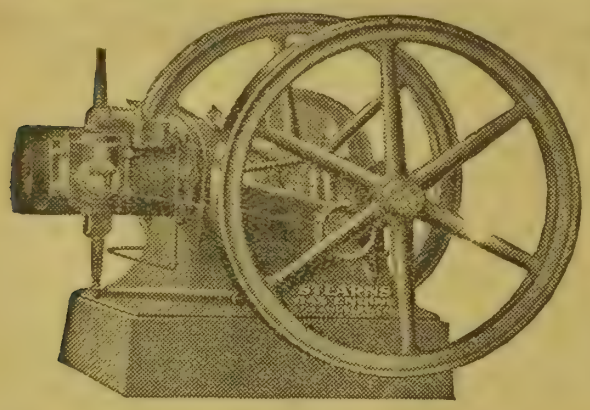

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Can enjoy even Better Lighting Facilities than the city affords by using
Perfection Acetylene Generator
The only machine having a perfect feeding device. The only machine sold on trial to responsible parties. No matter what your experience has been with other machines, you can try this machine with out money until satisfied. All machines sold with a positive guarantee.
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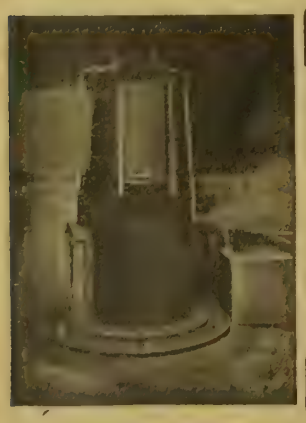
Agents Wanted in All Parts of U. S. Write for Particulars.



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After devoting several years to deep study and experiments, and the expenditure of many thousands of dollars, this pump has been brought up to the point where it is practically indestructable, has an efficiency not to be excelled, and is ready to try conclusions with any deep well pump on earth. The principal improvement consists of a screw guide inserted in casing coupling and a ball bearing placed in each guide, which gives absolute protection to all parts of the pump, regardless of the amount of sand or grit which the water may contain. Write for catalogue and full description of these important improvements.
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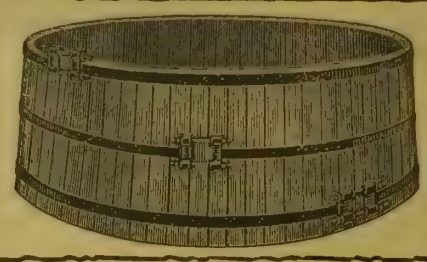

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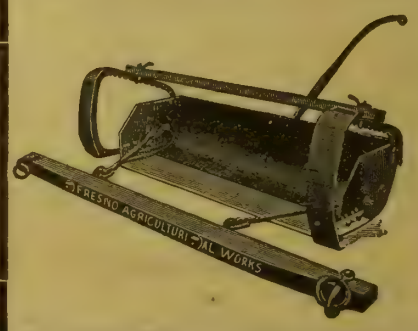

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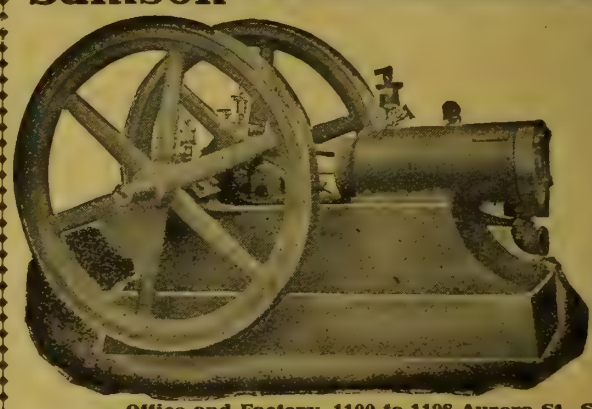
Fresno, California

Samson Gasoline and Distillate Engines



Are Strong and Durable
Fully Guaranteed in every particular
We make complete Irrigation Outfits
Samson Centrifugal Pumps
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Enlargement of our factory makes it possible for us to make prompt delivery.
Send for our new catalogue and estimates.
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The Callahan Distillate Engines
Four Carloads have arrived since the Fire
A First Class Engine at a Moderate Price
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Three Carloads in Stock
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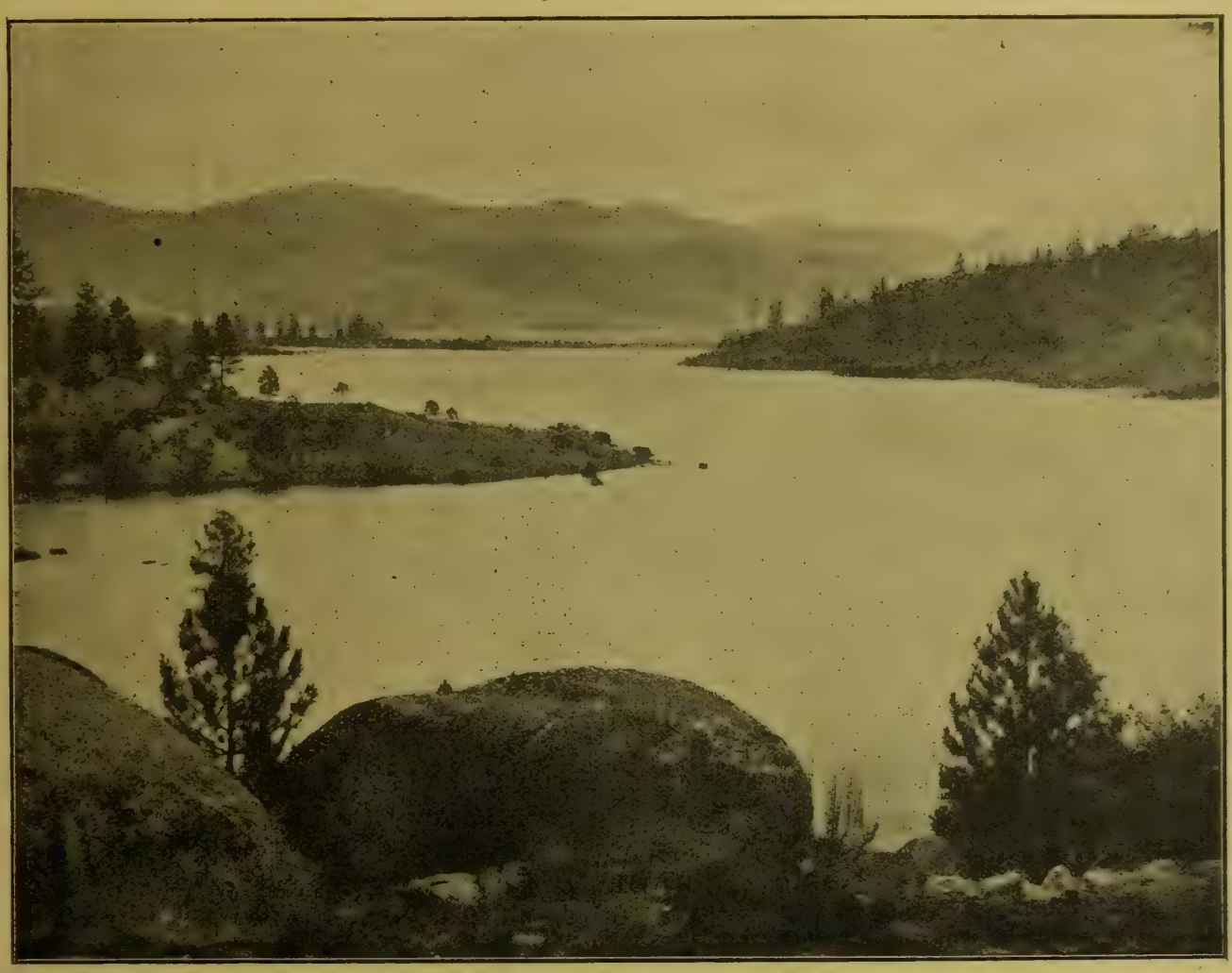
You can do it with the
HAQUE IMPROVED DOMESTIC OIL BURNER
It burns more air than any other burner on the market. Can be fitted to stoves, ranges, furnaces, and all kinds of heating systems. Simplest and most economical burner on the market. If you want the most heat for the least money, write for information to
Haque Domestic Oil Burner Co., 214 Winston St., Los Angeles, Cal.

California Cultivator

Los Angeles January 17 1907 San Francisco

General View of Lake Hemet



CALIFORNIA climate is due in large measure to the fact that the average annual rainfall is but about one-fourth that of the Atlantic Coast and the Mississippi valley. Thus the necessity for an adequate supply of water for irrigation purposes becomes of such importance that the saying: "Water is king in California" is recognized as a truism. Especially is this true since the three successive years of drought, 1898, 1899, and 1900, during which time there were few water systems in Southern California, aside from that supplying the Hemet lands, that stood the severe test.

The Lake Hemet Water Company in the year 1890 began the construction of the great Hemet Dam across the South Fork of the San Jacinto River, at a point 4,400 feet above sea level and 800 feet above the town of Hemet.

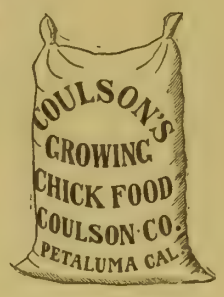
This dam is the largest piece of solid masonry in the West and was completed in 1895. It is 250 feet long. 100 feet thick at the base and 122 1-2 feet high, or about the height of an ordinary ten-story "sky-scraper" building.

The river here enters a deep gorge or steep-sided canyon, flanked on either side with almost perpendicular cliffs of solid granite. A wide valley extends from this point back several miles into the mountains, forming the bed of what is now Lake Hemet, the source of the water supply for the Town of Hemet and surrounding valley.

In addition to the ample security afforded by the great reservoir, a partially developed artesian well belt, situated near the head of the lake, is in itself capable of supplying enough water for a large area. Nineteen wells have been sunk in this water-bearing land, and have yielded by actual test over one hundred inches of water continuous flow. Only a small part of the belt has been developed. The elevation of over 4,400 feet above the level of the ocean makes this artesian belt the most remarkable in the United States.

The water-shed supplying Lake Hemet contains over 100,000 acres. From its altitude and the fact that it consists of wild, uninhabited mountain wastes, there can be no contamination of the water supply. From the dam the water flows for ten miles through a natural channel, the rocky bed of a gorge or canyon, where it enters the pipes, flumes and cement ditches of the water system, to be conducted to the homes of the residents of the valley.

The water all comes from the rain or snow in the high mountainous regions and is kept entirely free from all deleterious matter, thus ensuring perfect purity and the softness that is so beneficial for either domestic use or for irrigation purposes.



Coulson's Growing Chick Food

Is a mash feed for the growing chicks, designed for feeding when you leave off feeding Coulson's Special Dry Chick Food, composed of articles, each the best in its class, combined in the correct proportion to form

A PERFECT BALANCED RATION

It contains blood meal, meat meal, bone meal, and other articles rich in protein, and the other elements, and is the feed you need to make your chicks excel in size and weight and enable them to become strong, vigorous and heavy-laying fowls.

COULSON'S GROWING CHICK FOOD WINS OUT

San Marcos, Cal, July, 23, 1906.
Gentlemen:

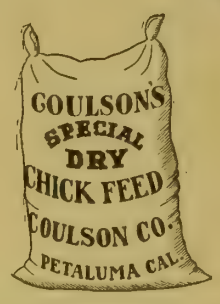
I tried COULSON'S GROWING CHICK FOOD exclusively my first year in business on Brown Leghorns. I sold the cockerels as broilers at nine weeks, averaging 2 pounds, 3 oz. each.

I tried my own mixture of feed the next year and took the same care of the chicks, and sold 75 cockerels as broilers, weighing 105 pounds, making an average of about 1 1-4 pounds each.

Having tested at my own expense the two methods I have concluded that COULSON'S FOOD is superior.

(Signed) J. B. HOOVER.

USE COULSON'S AND BE SATISFIED



Coulson's Special Dry Chick Food

Is acknowledged by all The Best and most Reliable Feed for Baby Chicks.

COSTS LESS THAN 2 CTS. FOR FIRST FOUR WEEKS

NLY HIGHEST QUALITY GRAINS, ETC,, USED

Special Dry Chick Food contains numerous different seeds adapted to needs of the little chicks, besides meal, charcoal, bone and many other necessary articles, each in Granulated form making

A PERFECT BALANCED RATION

CANNOT PRAISE IT ENOUGH

"I cannot say enough in writing in praise of your Special Chick Food. It is just fine. I never saw chicks do so well before."

J. S. SCOTT, Madison.

PULLETS LAY EARLY

"I have fed your Special Chick Food and Growing Chick Food to all my stock with one exception. I tried one lot of 350, and fed them my way of raising chicks back East. Results just fair. The other were fed up to three months on your Special Chick Feed, and the results were a surprise to me. The birds were large and the cockerels out of one lot I sold to the California Market and got a big price, with the request to send on to them at any time I had more cockerels of the same quality."

Respectfully, A. P. WARD,
Calistoga.

COULSON'S SPECIAL IS THE BEST, AND "THE BEST IS THE CHEAPEST"

Coulson's Poultry and Stock Food Co.

Petaluma, Cal.

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

Buy the World's Famous Egg Food No. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER

Used by all the largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the GOLD MEDAL at the St. Louis World's Fair for greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th. 1904.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A FILCHER, Commissioner.

And Now Comes New Reward for Merit:

Read the following telegram received from the Lewis & Clark Exposition at Portland

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

PETALUMA INCUBATOR CO.

Main Office and Factory, Petaluma, Cal., Box F. Los Angeles, 505 South Main Street
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Breeder of ***Arrowhead Strain*** of

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Won at Los Angeles Show. the largest ever held on the Coast, 225 Barred Ro in class, as follows: 1st, 2nd and 5th Pens; 1st, 3rd, 4th and 5th Hens; 1st, and 3rd Pullets; 2nd Cockerel. Barred Rock Cup for Best Display; Cup for B Pen in Show; 2 Incubators and other specials.

Choice Stock for sale from same mating that I bred my prize winners fr Prices reasonable. Eggs, ***$3*** and ***$5 per 15.***

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Take San Pedro electric cars via Gardena to Smith's Crossing.

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Breeders of *S. C.* Black, Buff and White Orpingtons, Barred Rocks, S. C. White Leghorns, Pekin Ducks, Mammoth Bronze Turkeys. Pigeons: Tumblers and Homers

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Barred Rocks

We have added to our own Prize Winning Birds, the entire stock, equipment and good will of S. M. Butler, the originator of the Arrowhead strain.

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California Cultivator

Vol. XXVIII—No. 3 Los Angeles, California, Thursday January 17 1907 Subscription $1 a Year

Citrus Trees in Marly Subsoils

A Review of the Observations and Experiments Made in Various Countries Regarding the Relation of Marl to Chlorosis of Citrus Trees

By DR. E. W. HILGARD, University of California

IT WAS early ascertained by this Station, and has been repeatedly stated in its publications, that the majority of California soils, in common with those of the arid regions generally, is calcareous in the sense of containing lime enough to produce all its advantageous effects. In the humid region generally, these effects have very frequently to be brought about by artificial liming or "marling," an operation which but very rarely is of practical use in this State.

It is also well known that "overliming," or the use of too much lime or marl, is very injurious to many culture plants. The case in point best known is probably that of the phylloxera-resistant grapevine stocks brought to France from the Northern United States. The soils in the grape-growing regions of France are very commonly marly, and the result was the chlorosis, or yellowing of the leaves, and general failure of the American stocks on soils whose lime-content would not affect the European vine injuriously at all. The latter is credited with enduring even as much as 40 per cent. of lime carbonate in the soil, while some of the American resistants are injured by as little as 5 per cent. of the same. Hence the mission, a number of years ago, of Professor Viala of Montpellier with a view to finding, in the strongly calcareous lands of Texas, a phylloxera-resistant grapevine which would also resist chlorosis. Viala was successful in this quest, and the stocks and hybrids from the Texas vines now form the main basis of "reconstituted" vineyards in France.

Marly or excessively limy soils are quite exceptional in California, so much so that until recently only one case of chlorosis resulting from that cause had come to the knowledge of the Station. The yellowing of orange and lemon leaves, not uncommonly observed at some points in Southern California, has throughout been due to other defects in the subsoil, which weakened the root-growth or gave rise to fungous disease.

Citrus orchards in the Great Valley have thus far been remarkably free from some of the troubles noted south of the Tehachapi; the chief complaints having been caused by the effects of water-seepage from high lying ditches in the foothills. The soils themselves have not been found in fault except where it was attempted to plant orchards on heavy clay subsoils, or hardpan; emphasizing the need of a careful examination of the substrata of any land designed for tree culture.

Quite lately, however, complaints of yellowing and languishing of citrus trees grown in apparently the best quality of loam soil in the Porterville region have come to the Station. Portions of young orchards planted on low ridgy land were found to become diseased, their leaves yellowing and dropping; while those located in lower ground continued to grow thriftily. The samples of soil and subsoil (the latter taken to the depth of from 3 to 5½ feet in accordance with the directions given from the Station) showed that while in the lower ground where the trees were in good condition, the subsoil at 3 feet contained only 12 per cent. of lime carbonate, on the higher land it was full of white lime-nodules in the third foot; and that the fine earth around them, in which the roots vegetated, contained from 22 to 39 per cent. of lime carbonic. This evidently exceeds the tolerance of citrus roots, hence the yellowing of the leaves. In another similar case, examination showed that even where the trees were doing finely (the soil being very rich,) the calcareous layer was reached at from 4½ to 5½ feet. It is probable that so soon as with progressive growth the roots reach the above depth they will here also be affected by the excess of lime.

This is a condition which perhaps cannot be remedied by any applications made to the land. When lands have been injured by artificial overliming or excessive marling, the effects can be neutralized by the use of organic matter, usually applied in the form of stable manure, a procedure already prescribed in the classic treatise of Marling, by Ruffin of Virginia, early in the last century. But it is clearly impossible to apply this remedy in the case of lands naturally underlaid by marl; at least in the arid region, where roots penetrate to depths unknown east of the Mississippi. No vegetable material could be artificially applied at depths of several feet. Inquiry has been made whether it would not be possible to neutralize the lime by some acid; but this, even if financially possible, would surcharge the upper layers with a substance more injurious than the excess of lime itself. Possibly an antidote may be found in some soluble compound of magnesia.

Such lands should, simply be given to some other culture than citrus trees; and among these, grapevines on their own roots, or upon some of the lime-resistant varieties developed in France, will be found available wherever the loose soil extends to 4 or 5 feet depth. Other cultures resistant to marly soils are the fig, stone fruits on Myrobalan or Chickasaw-plum roots, and the quince; also most legumes.

It should be kept in mind that calcareous geological formations extend along the Sierra foothills from the Merced River south through Fresno and at least northern Tulare county, and can be observed in the bluffs of the streams as they emerge from the foothills. It is perfectly easy for any one to test these whitish materials for lime, and to recognize the lime hardpan in subsoils, by a few drops of muriatic or nitric acid, or even strong vinegar; which will cause them to "effervesce" or "fizz" from gas bubbles driven off by the acid. A bit of chalk or limestone can be used for comparison, thus gaining some idea of the liminess of the material. Long low ridges extending valley-ward from the foothills may be suspected of being marly, and should be examined as to the nature of their subsoil before planting. Entirely similar conditions exist locally in portions of the Santa Clara River Valley, and on some other Coast Range streams in the south. Also at a few points in the Santa Cruz range.

The matters discussed above emphasize from an additional point of view the need of subsoil examination in the arid region especially, because of the deep rooting of all plants and particularly of trees. It seems desirable to call attention to another and very obvious mode of recognizing any unusual conditions of soil and subsoil, viz., the native vegetation. It may be said in brief that the native vegetation is ordinarily the outcome of centuries and millennia of "natural selection," which results in the predominance of the species of plants best adapted to the native growth must be presumed to express the same facts and adaptations which we subsequently find out laboriously by the successes and failures of various crops. What we need is to be able to interpret correctly the indications presented to us by the native growth.

To some extent this has been and is daily done by farmers all over the world, who buy wild land in accordance with the indications of the tree growth where such exists. In many Eastern States the official assessment of lands is habitually based upon the natural tree-growth, and the judgment of experienced men on this basis is rarely at fault, and has even excited the envy of agricultural chemists.

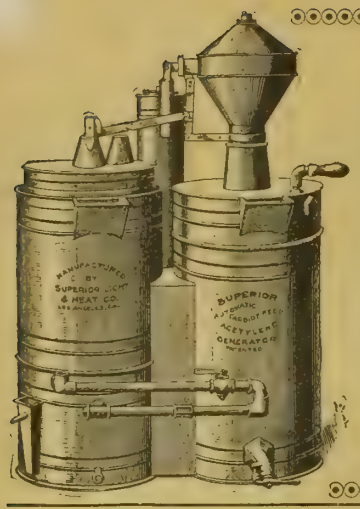
In the eastern United States and in the humid region generally, the presence or absence of an adequate supply of lime in the soil is largely the determining factor of the vegetative character; more so even than the moisture conditions, which are commonly credited with being the chief governing condition.

In the arid regions, where lime is almost universally present in soils to the needful and useful extent, moisture is undoubtedly the dominant factor causing differences in native vegetation. We are therefore deprived to a large extent of the signs by which good lands are recognized by the Eastern settler, the more as forest growth is not so abundant in the arid region. We must, in order to utilize the indications of the soil-character by native vegetation, observe not merely the kinds and development of trees on the ground, but also the shrubby and herbaceous growth; noting not only the presence but also the absence of plants prevailing in the neighborhood, from certain portions of the area.

Every-one in California knows the "alkali weeds," which tell him that the land on which they grow is more or less impregnated with salts; many, have learned which of these plants indicate land which under present conditions it will not pay to try to reclaim. Now just as some plants will resist a greater or less amount of alkali salts than others, so some plants are tolerant of an excess of lime in the soil, while others will refuse to grow, or at least will not naturally be found occupying, ground containing more than the limited amount of lime, which is in all cases desirable.

The infrequent occurrence of marly lands in California, already referred to, has been the cause of the fewness of observations made in regard to the distinctive natural vegetation of such tracts. It is evidently very desirable that such observations should be made for the benefit of future planters of orange orchards; and the marly ridges of the Porterville region afford a good opportunity for this purpose. Undoubtedly some of the shrubs and herbaceous plants prevailing elsewhere in that region will be found wanting on the

(Continued on page 66.)



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It Has Many Points of Advantage:

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Tell us the number of lights you use and we will give you full information as to size of generator required and the cost of installing it.

WRITE TODAY. Don't put off the enjoyment of a good light in every room in the house. It will be a constant source of satisfaction to every member of the family. Address us this way:

SUPERIOR LIGHT AND HEAT CO.
151 North Clarence St., Los Angeles

WALNUT TREES grown from carefully selected seed

I have a fine lot of trees. Call and see them. Postal gets price list. A. A. MILLS, Anaheim, Cal.

NEWBERT'S PHENOMENAL BERRIES

The most up-to-date berry on the market. They will clear you more money to the acre than any other berry you can grow. $750 clear profit has been made from one acre of these berries. The market price has been from 75c to $1.50 per crate of 16 half-pound baskets. I have taken ripe berries from my vines by the first of May.

Young Plants—I have for sale this year plants that I will guarantee will grow you large and healthy vines. **Prices**—I can furnish large orders on short notice. Price per dozen $1.00, per hundred $7.50.

My plants are rooted from the tips, and will make you a strong and fast-growing vine. Order at once to ensure delivery.

F. M. NEWBERT'S
Poultry and Berry Farm
Palmetto Av., Sacramento, Cal.

To get actual size of the "Phenomenal" measure 2 inches lengthwise and 1 inch in width, then draw a circle around the points.

Cause and Effect

IF YOUR DEALER DOES NOT CARRY
"MOCOCO"
FERTILIZERS.
order direct.
Pamphlet and Price-List free. on application.
Accept no substitute; insist on having "MOCOCO"

Not All Manure Spreaders Pay

The Idea of spreading manure properly is such a good one and the benefits derived are so great you are apt to think *any* spreader will give you these benefits—that a spreader is a spreader.

There is where you may make a mistake, for some spreaders are only trouble makers and the second season they are not taken out of the shed. To make them work takes too much time and costs too much money.

If you get that kind of spreader you're apt to conclude that spreaders are made to sell and not to spread manure.

SUCCESS SPREADERS

have 28 years' experience back of them—thousands of them are spreading manure on the best farms in the country and are giving no trouble.

Twenty-eight years has eliminated the trouble making features—out of a hundred new devices and schemes that we have tried perhaps ninety have proved more harmful than helpful. They make good talking points but they don't help spread manure. SUCCESS Spreaders are made to spread manure.

When you get ready to buy a manure spreader, (and every farmer should have one) first write for our spreader book, it will help you; next go to your local dealer and see a Success Spreader but don't buy one until you have asked a man who has used one. He knows.

KEMP & BURPEE MFG. CO., SYRACUSE, N. Y.
Deere Implement Company, San Francisco, Cal., Pacific Coast Agents.

Deciduous Fruit Culture

By J. W. MILLS

Horticultural Freaks

IT IS about time that the advertisements for new things in fruits will show up. Two years ago it was the seedless apple that was given free advertisements by a large number of country newspapers whose editors did not know the difference between a peach tree and a pumpkin tree (if the pumpkin vine happened to climb the tree.) They actually told of an apple which grew on the trees without blossoms. The tree never having blossoms, it was impossible for it to lose its fruit from frost. It had no seeds and therefore the codlin moth could not infest it, because the pest could not live on apple flesh, it must have apple seeds to eat. Several papers actually published these absurdities and wrote editorials on the subject hailing with delight this new wonder and claiming for the introducer, I should say faker, more credit than they ever gave Burbank for his meritorious creations. Now, if the tenderfoot farmer had kept his eye on the Cultivator, no second thought would have been given by him to such nonsense. But there will be new introductions of the same class by some faraway inventor. Reliable and experienced horticulturists are quick to take up new things which are likely to prove worthy and it is well to ask the opinion of some of this class before taking up with these new things that drop out of a clear sky.

CALIFORNIA VINE DISEASE.

Professor Pierce has used this name in preference to the "Anaheim" disease and it is a good idea. The Pernicious scale is known all over the United States as the San Jose scale, because it first showed up there. The California vine disease is now found from one end of California grape growing districts to the other, and while the ravages of the phylloxera has been circumvented, this disease seems to baffle all attempts to conquer it.

Prof. Pierce found that the Lenoir seemed to resist the disease to such an exteht that old vines continued to bear as much as eight tons per acre in the midst of old vineyards, which had long since died of the disease. This lead him to experiment with seedling varieties crossed with Lenoir, in the hope that he might get favorite varieties to restore their desirable qualities and also to inherit some of the resistant qualities of Lenoir. How successful he has been in this we do not know. We regret to say that his work was discontinued when the Plant Introduction Garden was established at Chico. No doubt this work will be carried on by others. It is perhaps the only successful method of controlling the disease, though it has been said that there were indications that it would loose its virulency after awhile There are others who claim that with wide experience they have never detected any such signs. We have noticed in one particular case where an outside row in a vineyard of several varieties, part of the vines died of this disease during a period of four or five years. After that none were affected and continued to bear heavy crops each year. All of this variety were on in an outside row, showing that all had even chance. A few of another variety died of the same disease and after a lapse of several years none have died during the time. Sultana showed all the symptons, on some vines, the bunches of grapes dried up just before ripening, the leaves had the characteristic marking and the canes ripened the way peculiar to the disease.

These symptoms prevailed for two years, but the vines did not die. They have never been prolific bearers either before or after the appearance of the disease.

TREES FOR THE NURSERY.

The nurseries are not entirely faultless, nevertheless much blame is frequently placed on them for which they are in no way responsible. Trees usually come from the nursery, in bales or boxes. A bale is made by placing the trees with their roots all together and tieing them. Straw or long hay is usually wrapped firmly around both the roots and tops and the whole sewn up with burlap. This is then moistened and shipped. On arrival at its destination much of the moisture is apt to have evaporated, the amount, depending upon the condition of the weather and the aridity of the climate through which the trees must pass on their railroad journey. On this account every precaution should be taken to inform oneself when the trees are at the depot, so that they may immediately be taken care of and not left for several days or a week drying on the platform. If the bale looks dry it is a very good plan to immerse it, tops and all, in a pond or irrigation ditch until thoroughly soaked, say for about ten or fifteen minutes. If the holes have not been dug and everything is not ready for planting, a trench about a foot deep should be made with a plow or shovel, turning the dirt all one way. Nearby a hole should be made in which is prepared a mixture of dirt and water about the consistency of thick soup. The trees should then be taken singly and doused up and down in the mud, the roots placed in the trench and then covered over with the mound of soil until none are exposed. Trees if treated in this manner when taken from a bale or box will keep in perfect condition for several weeks, and of there is any danger of the tops sprouting owing to warm weather cover these also with dry straw or hay to keep the light away from them.

LARGE OR SMALL TREES?

The time of year for fall setting of trees is near at hand, and many people are preparing to plant new orchards, or add to what they already have. We think it would be only a fair estimate to say that two-thirds of all the trees planted throughout the southern part of the United States will be peaches, owing to the high prices paid for this fruit the past two years, and there will be hundreds of thousands of all sorts and sizes set out this season.

When arranging for new plantings most people prefer good, large-sized trees—four and one-half to six feet high, which, anyone will admit, are good trees for planting, provided they are thrifty and not over one or two years of age, and many will hestitate to plant smaller, expecting that with the growth already made they will gain a year in fruiting. But my experience has been such as to make me

SEEDS

POULTRY SUPPLIES
STOCK FOODS
BEE SUPPLIES

Send For Our Catalogues

CHAS. H. LILLY CO.
141 Spear St. San Francisco

Trees Early Crawford, Hale's Early and many other varieties of Peach trees; all fine budded stock.
Large stock of all the leading varieties of Apples, grafted on whole roots and free from all pests. Also a fine stock of Cherries, Pears, Burbank and S.B.S.S. Walnuts, etc. Send for price list.
A. F. Scheidecker, Sebastopol, Cal.
Prop. Pleasant View Nursery.

Strawberry Plants 150,000 Brandywines
200,000 Klondyke
and a few Arizonas
All First-Class Plants
Chas A. Grafton, Covina, Cal.

Berry Plants

Gardena Dewberry -	$8.00
Brandywine - -	2.00
Aroma B - - -	3.00
Senator Dunlap - -	3.00
Klondyke - - -	3.00
(Improved) Lady Thompson	2.50

All plants fresh from the east last spring, and were raised on virgin soil. Write for prices on 100,000 lots.
A. E. HARRINGTON
R.F.D. 6, Box 37 Los Angeles, Cal.

Strawberry PLANTS
Headquarters For The
Burbank Beauty
A real beauty and the earliest and most vigorous of all strawberries. A good table berry and will ship further than any other berry. $3.00 per thousand.
Brandywines—The old standard variety of the southwest. Can fill orders by the thousand, hundred thousand or million. $2.00 per thousand. Plants carefully packed and we guarantee their arrival in good condition.
FAIRVIEW FARM NURSERY
G. H HOPKINS, Prop BURBANK, CAL.

Twenty Thousand First-Class
Walnut Trees
Two Thousand Grafts
No Disease. Long Roots and Every Tree Warranted
SANTA BARBARA SOFT SHELL
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Improved Gardena Dewberry, and all Other Kinds of Berry Plants. Ornamentals, Etc.
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MAGNOLIA NURSERY WHITTIER, CAL.

Early Cuthbert Raspberry Plants
I have Twenty-Five Thousand Early Cuthbert Raspberry Plants to sell at Six Dollars per Thousand.
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Walnut Trees Stocky, healthy Seedlings 6 to 12 ft. high. Selected seed from grafted orchard. Best variety on the market.
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$1.50 per Thousand
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800,000 Brandywines
400,000 Al
20,000 Pride of Michigan
All grown from Kellogg Stock and guaranteed First-Class Plants. Write for prices.
F. P. BALDOSSER, Covina, California

500,000 Brandywine Arizona and Klondyke **Strawberry Plants**
At bottom prices. All first-class and from the east last spring. **G. W. Mullendore, Covina, Cal.**

believe that this idea is misleading. I do not think there is any advantage to be gained in planting the larger trees. It is true that a great many successful orchardists prefer to plant the larger-sized trees, but I am convinced that this is more a matter of preference than of profit.

Experience is a better guide than theory in the matter, as is the case in every phase of fruit growing. It has been through experience and observation that I have been led to form my opinions. I do not wish my readers to understand me to say that I condemn good-sized one-year-old trees, for that is not my intention. What I wish to do is to show the true value of the small tree.

In an orchard under my observation a few years ago a goodly lot of trees were set out. Some were two-year-old seedlings, some large, thrifty, one-year buds, some June buds, and still others were dormant buds. Three years later I noticed this orchard and found the trees nearly all the same size, the June buds being a little thriftier looking and all bore some fruit that season.

In uprooting and transplanting a small tree, the root system is not so very badly disturbed, while in a large tree it is much mutilated and diminished. Hence the small tree grows off more readily and rapidly, and gets well started, while the large one is repairing cut and broken roots, and getting ready to grow, and in the course of two or three years the June buds will catch it every time.

It is true that a two-year-old tree is full of fruiting buds, and if set out in November, may bear a few stunted specimens the next season. But that amounts to nothing and will be a greater stunt to the tree. Do not plant the June bud and expect it to thrive among the weeds and grass. But manure the ground well and cultivate thoroughly, and with this treatment I believe you will be induced to believe as I do, that there is nothing better for fall planting than the June bud.

ROTATION AND WEEDS.

The value of rotation in ridding land of weeds is well illustrated by two plats at the Minesota Experiment Station. One plat on which wheat has been grown continuously for eleven years, is quite badly infested with wild oats. Another plat two feet away from the first one, on which a five-year rotation (wheat grass, oats and corn) is followed, is free of wild oats.

If any farmer who is troubled with any of our common annual weeds will lay his farm off in convenient shaped and sized fields, and follow a system of rotation using a well-cultivated crop of corn once in five years, and one to three grass crops during the same time, he will have but little trouble with weeds will increase the products of his farm until he will consider the weeds a blessing for having forced him to change his method of farming.
—Southern Farmer.

"My dear sir," said the man who felt that his ability had been questioned, "I would have it understood that I am a self-made man."

"That's all right," replied the other. "Just keep quiet about it and no one will get wise."

"Have pity on me, darling" pleaded the poor but otherwise honest young man; "I cannot live without you."

"What's the matter," queried the homely heiress; "have you lost your job?"—

Walnut Trees
Come and Let Me Show You the Best Trees on the Market

Seedlings Several Thousand grown from the very best selected, hand picked by myself from grafted trees. Placentia Perfection and Santa Barbara Soft Shell.
Grafted Trees—2500 Placentia Perfection, extra selected and absolutely guaranteed.
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Established 1887 by Present Owner

STEWART BROS. With a bigger and better stock than ever of
ORNAMENTAL AND FRUIT TREES
are located with their salesyard this year at ***732 S. Spring St.*** Los Angeles

A Wide-Awake and Up-To-Date Seed House
We are now publishing our 14th Annual Catalogue. It is artfully designed; the style is new and original. The Cover Pages portray the busy scene at the Los Angeles market during the early morning hours. Every vegetable is illustrated and is described in Spanish as well as in English. Send your name and address asking for the catalogue.
We are Southern California Agents for
The Glendale Incubator Co.
a hot water machine, constructed along lines that are a working demonstration of the true way to apply the fundamental theory of artificial hatching.
In one year it will pay for itself in the saving of time, trouble and expense.
Those using the GLENDALE INCUBATOR are its most enthusiastic friends, and they are not running the machine for fun but for profit.
Its chief points of superiority are, durability, ease and economy of operation.
Each day's delay means the loss of DOLLARS to you, so do right, and write as soon as you can get a postal card for our catalog, telling you why you can't afford to be without our INCUBATORS and BROODERS.
JOHNSON & MUSSER SEED CO. 113 NORTH MAIN ST., LOS ANGELES, CAL.

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The California Fertilizer Works' Fertilizers are highly recommended by several members of the Tulare County Citrus Fruit Exchange, Fresno vineyardists and all others who have used them, for having given **grand results** and **profits.**
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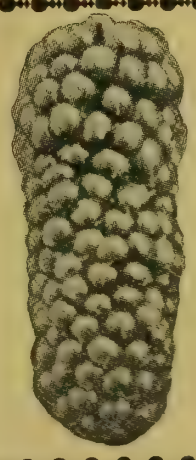

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Rich Farm Lands
Alfalfa, Sugar Beet and Fruit Lands from ***$25.00 an Acre Up.*** Splendid opportunities for dairyman, in one of the choicest sections of California, where climate, soil and water combine to produce most desirable results. Corcoran, the new and rapidly developing town, is the capital of this rich section. For particulars address
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Write us for prices on the **Buhl** sanitary **"Glass Finish"** Milk Cans, all sizes. We have the largest stock on the Coast and our prices are the lowest.

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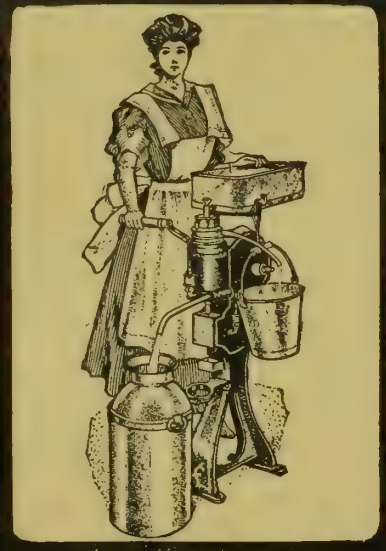


WEARS LONGEST

as well as skims cleanest. Time has proved the simple, strong construction of the U. S. is more durable than any other separator.

Used 14 Years
Repairs 75 Cents

Fond du Lac, Wis., Nov. 8, 1906.
To whom it may concern:
I have used one of your U. S. Separators for the past **fourteen** years and it has given the very best satisfaction. I have paid **75 cents** for extras since getting the machine. I cannot recommend the U. S. too highly. J. Balson.

27 pictures with plain, easy-to-understand explanations in our new catalogue, make the construction and operation of the U.S. as plain as though the machine was before you. Let us send you a free copy. Just write: "Send Construction Catalogue No. 20". Write today.
Don't buy a Cream Separator before you see this book.

VERMONT FARM MACHINE COMPANY
Bellows Falls, Vt.
Eighteen distributing warehouses centrally located in the United States and Canada

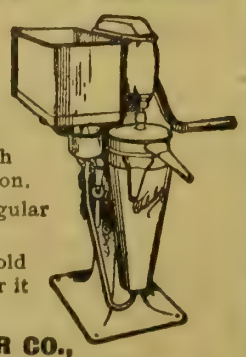
1½ lbs. more butter

If you can increase your butter production without any increased cost or any more work won't it pay you to do it? And if you can get more butter from you milk with **less work**, that will be still better, won't it? That's exactly what you can do if you will do as Mr. Leiting did—buy a **Sharples Tubular Separator.** Here's what he says about the Tubular:

Randolph, Nebraska, Feb. 15th, 1906.
Gentlemen:—On the 23rd day of January, 1906, I took a No. 4 Sharples Tubular Separator on trial. On learning that I was in the market for a cream separator, the agent for the disc style "bucket bowl" separator brought one to my farm and requested me to give it a trial before making a purchase. After giving both machines a fair trial, I concluded to keep the Tubular as I consider it far superior to the other machine. It skims closer, runs easier, and is very much easier to wash, there being so many less parts. **From three skimmings of milk from 7 cows, we were able to make 1½ lbs. more butter with the Tubular than we could with the "bucket bowl" machine.** B. LEITING.

The Sharples Tubular Separator

MORE BUTTER MORE MONEY



gets all the cream there is in the milk, does it so easy that it's not work to run it at all, and is so simple, with only one little part in the bowl to wash and keep clean that comparison is out of the question.

The extra cream it gets makes the **Tubular** a regular savings bank for its owner.

All the other good money-making points are told in book F-260, which you ought to read. Write for it today—we'll send it **free** to you.

THE SHARPLES SEPARATOR CO.,
Toronto, Can. WEST CHESTER, PA. Chicago

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Live Stock and Dairy

To Judge a Horse

THE following is attributed to Zenophon, the famous Greek writer, who lived more than 2,300 years ago. It can scarcely fail to be interesting reading:

"I write how not to be deceived in the purchase of a horse. If the horse is an unbroken colt, one must judge him by the construction of his body, as, if he has not been ridden, one cannot know from experience what his disposition is. It is first necessary to examine the feet; for, as in the case of a house, where it does not matter how fine the superstructure may be, if the foundation is imperfect, the horse is of no value if he has not good feet.

"Look first to the horny portions of the hoof, for those horses with thick hoofs are superior to those horses with thin hoofs. Next, it should be noticed whether the hoofs be upright before and behind, or low and flat on the ground. The high hoofs keep the frog at a distance from the ground, while the flat hoofs press equally with the soft and hard part of the feet. Strong-footed animals can be known by the sound of their tramp on the hard earth, but the hollow-hoofed foot rings like a cymbal when it strikes the earth.

"It is desirable that the parts above the hoofs and below the fetlocks (the pasterns) be not too erect, like those of the goat, for legs of this kind, being stiff and inflexible, are apt to jar the rider, and are more liable to inflammation. The bones must not, however, be too low and springy, for in that case the fetlocks are liable to be chafed and bruised when the horse gallops over clods and stones.

"The bones of the shank should be thick, for these are the columns that support the body; but the veins and flesh on them should not be thick. If they are thick, then when the horse is galloped over rough ground the veins will fill with blood and become varicose, so that the shanks will be thickened and the skin become distended and free from the bone. When this happens the back sinew gives way and the horse becomes lame.

"If the horse, when walking, bends his knees flexibly, he will also have flexible knees when going at a faster pace. Horses increase in flexibility of the knees when they increase in age. Flexible goers are highly esteemed, as they should be, for such horses are less liable to stumble than when they have rigid, unbending joints.

"If the arms below the shoulder-blades be thick and muscular, the horse appears handsomer and stronger than otherwise, as in the case of men. The breast should be broad as well for beauty as for strength. This also causes better action of the fore legs, which do not then interfere, but are carried well apart.

"The neck should not be set on, like that of a boar, horizontally from the chest, but, like that of a game-cock, should be upright towards the crest. The head should be long, but the jawbone should be small and narrow, so that the neck will be in front of the rider, and the eye will look down at what is before the feet. A horse of this conformation will be less likely to run away, even if he be a high-spirited horse, for horses do not attempt to run away by bringing in but by thrusting out their heads and necks.

"Note whether the mouth is equally hard on both sides. If the jaws are not equally sensitive the horse may be hard-mouthed on one side or the other. It is better to have the eye prominent than hollow, as the prominent eye will see further than the hollow one.

"Wide nostrils are better for respiration than narrow ones, and they give the war-horse a fiercer aspect. The higher the crest and the smaller the ear, the more horselike and handsome is the head. High withers give the rider a sure seat and produce a firmer adhesion between the body and shoulders. A double loin is also softer to sit upon, and better to look upon than if it be single.

"A deep side rounded toward the belly renders the horse easier to sit. He is also stronger and can more easily be kept in condition. The shorter and broader the loin, the more easily will the horse raise his fore quarters and collect his hind quarters under him in going. These points cause the belly to appear smaller. It it be large it injures the appearance of the animal, renders him weaker and less manageable. The quarters should be broad and fleshy, in order to correspond with the sides and chest. If they are firm and solid the horse will be light in the gallop and will be speedy."

STARTING AN ANGORA FLOCK.

Those who enter upon goat raising must of course make their operations conform to their capital, the same as in any other business. They will find that desirable does will cost from $5 to $12 each and bucks all the way from $50 to $100 each; so that a large herd of this kind, although preferable, will cost a small fortune and is beyond consideration by most people who will engage in the industry. Another plan that may be pursued by one who has limited capital, but time and patience to wait, is to begin with a few first-class animals and build up a flock from these. The result will be satisfactory and the only drawback is the length of time required. After all, this may be the wisest plan for most beginners to pursue, as the experience so necessary to success will be gained as the flock increases. The Turks many years ago began the practice of crossing Angora bucks upon Kurd does. They probably had in mind the two fold purpose of producing thereby a hardier goat than the pure Angoras and of increasing the number of goats in order to supply the increased demand of Europe for mohair. Crossing the Angora bucks upon the common goats of the United States has been practiced since their introduction and the results have been satisfactory in many respects. Many of the large flocks of Texas and New Mexico have had Mexican does for their foundation. Building up a good mohair producing flock upon this plan requires five or six years. The advantages are that the does with which the beginning is made are cheap, costing from $1.50 to $2.50 a head. During the first and second crosses there are many twin kids, thus increasing the herd in that pro-

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portion—a condition not existing except to small extent among the pure-bred Angoras; the size and hardihood of the progeny are increased and the liability to disease decreased. Care should be exercised in starting a flock by this method to select only such common does as are entirely white for any other color, however slight, is objectionable. If otherwise, the results might be satisfactory but the probabilities would be the contrary. In handing the crosses the breeder often finds that atavism becomes apparent when it is most objectionable. For instance, the progeny for two generations of a doe having black spots might appear all that is desirable while the third generation would produce the latent color. It is also quite necessary that the common does should be of the short haired variety. —Field and Farm.

ABOUT DEHORNING CATTLE.

Wil you tell me, asks a subscriber from Moorpark, whether there is any law, human or divine which justifies dehorning cattle.

Strictly speaking the practice of dehorning cattle, is not sanctioned by any human or divine law, yet in the keeping of many head of cattle together, whether they be milch cows or fattening animals, it becomes well nigh a necessity. Their horns in a state of nature are their implements of war, and also of protection. Domestication has made it unnecessary for cattle to have horns for protection; but domestication of cattle, like the civilation of man, does not take the warlike, mean temper out of many of them; and in the case of cattle, there will scarcely be found a herd of ten without one which will be mean toward its fellow, and take seeming delight in hooking and goring the others in the herd. The first thought in all such cases would be to remove the horns from this pugnacious one and let the others go. But cow nature is much like human nature; when the others see the one without means of defense, one and all they seem inclined to vent their spite upon it and will abuse it. Hence, in order to keep peace in the herd, dehorning becomes well nigh a necessity.

PROFITABLE PIG FEEDING.

Dr. Warrington, "in chemistry on the farms," states that for each 100 pounds of feed consumed the gains are: for cattle, 9 pounds; sheep 11 pounds; and pigs, 23 pounds, or pigs make nearly two and one half times as much gain from a given amount of feed as do cattle.

Analyses show that for every 100 pounds of the digestive nutrients consumed cattle gained 12.7, sheep 14.3, and pigs 29.2 pounds, thus showing the great value of hogs on the farm for profit to the farmer, and why it has become an adage, that the hog is the rent payer, the mortgage lifter, and farmers' cashier.

The hog can sell the farmer's corn through his stomach at a better price than any other animal on the farm. This makes pigs a desirable farm animal, not only because of the fact that they can convert more pounds of meat out of a given quantity of feed, but because at the present time they can be marketed as quickly as a field of grain. At the same time it is more profitable than selling grain, not only because there are better prices received for it, by feeding it to the hog, but because the farmer looks farther ahead and retains the fertility of the soil in feeding back that produced from it.

The profit of pig feeding depends upon the cost of the feed given them. Therefore, anything that cheapens the feed increases the profit and especially if it is not done at the expense of the health of the hog.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fere Outfits See O. J. Weder Co., 555-557 So. Los Angeles St., Los Angeles.

COWS AND EDUCATION.

Berea college, Kentucky, which is patronized by the mountain whites of that State, is probably the scene of more hard efforts to get an education than any other institution in the country. A few years ago a mountain boy and his sister led a cow thirty miles over the mountain to Berea, walking every step of the way. They rented two rooms, boarded themselves, and earned their own way through school, and the biggest item of their income was the milk they sold from the cow.

They went back home and sent two younger ones ones to school. The old cow stood stanchly by and helped the second pair through. Seven members of the family have either been graduated from Berea or are still in the school, and they have all brought along a cow to help them through, although it was not always the same cow.

THE HIGH HEADED HORSE.

The best way to get high-headed horses, according to the Chicago Live-stock Journal, is to breed them with vim and the natural high-head conformation with the head and neck well set on top. The horse with the head set on low down in front or the low-necked horse can not be made to carry a graceful head and neck by checking him up. It only represents the driver as cruel or thoughtless, and the horse as badly built. The high head in all classes of horses is indicative of intelligence, energy, and vim that is an important factor in the market value and price of the horse, a characteristic of good breeding and superior quality, inherited from the proud, handsome Arab of the desert in his perfect conformation. Never breed to a stupid, down-headed horse that has to be anchored up with a check-rein.

The high-knee action, like the handsome, high-headed horse, is bred that way, with the conformation for high action and high head that always commands a premium on the market, whether draft or driver. If these characteristics are bred in, it stamps the value of the horse and attracts the admiration that only the high class horse can command; it is an indication of good breeding. Good action is a market requirement that should be kept in mind by the horse breeder.

SHORT HORN SALES.

Mr. H. P. Eakle, Jr., proprietor of The Enterprise Stock Farm at Woodland, reports that the sale of shorthorns at that place on December 29th, was extremely satisfactory, and he has determined to hold another at nearly the same time next fall. Mr. Eakles, received some very good prices, his fine bull Barmpton Lad bringing $550 and several others, both young bulls and heifers brought from $100 to $150 each. Seven females brought $660, averaging $94.30, and nine bulls brought $1447.50, an average of $161.67.

Others who sold were W. B. and T. B. Gibson, who sold 22 heads of calves 14 males and 22 females at an average of $42.27, and Robert J. Ashburner, who obtained an average of $84.32, for 11 head, consisting of 9 cows and 2 bulls. All the buyers were residents of this State, so that all of this most excellent lot will remain here.

GOMBAULT'S
CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

OAKHURST JERSEYS

Fine young Bulls, by a magnificent son of Golden Ferns, had out of imported cows. Also a bull calf out of a daughter of Golden Lad by a son of Golden Lad, making him 50 percent Golden Lad. We sold his full brother to the late Gen. Shafter, who won in every class he showed him in at Sacramento in 1905. Will sell at low prices considering breeding, to make room for new stock.

L. BRADBURY DUARTE, CALIFORNIA

LEMONITA HERD

Leffingwell Rancho, Whittier, Cal.

Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7.5000. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups "One of the grandest cows the island has ever produced."

VENADERA HERD

. . OF REGISTERED JERSEYS

Offers for sale, a few cows in milk. Richly bred young heifers and several bull calves of richest breeding, some from cows that have Official Yearly Tests. For particulars and prices, write

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Importer and Breeder of RED POLLED CATTLE, SHROPSHIRE SHEEP, RAMBOUILLET SHEEP, HORNLESS AMERICAN MERINO SHEEP. Both sexes for sale. Take electric car at Petaluma or Santa Rosa for Live Oaks Station. Address all mail to

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No More Blind Horses for Specific Ophthalmia, Moon Blindness & other Sore Eyes. Barry Co, Iowa City, Ia, have a sure cure

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The Reliable Strain Triumphant Over All

At the L. A. C. P. A. show Jan. 7th to 12th in the keenest comtition with the Clement & Fike, Fishel, and Dustin Strains, our birds won as follows: 1st cock, 2nd cockerel, 2nd and 4th hen, 3d pullet and 3d on the pullet trophy pen. Winning six ribbons and four silver cups, two being for the BEST DISPLAY OF WHITE WYANDOTTES in the show.

We have HONEST BIRDS that lay HONEST EGGS which we sell at HONEST PRICES.

Settings from our Special Mating headed by "Reliable 1st," our 1st prize cock bird, mated with our prize-winning pullet trophy pen still stand at $3.00 per setting, $8.00 for fifty eggs. Not over fifty eggs from this pen to any one customer.

Our "BOOKLET" tells all about our breeding pens and with prices that fit all pockets. We are now booking orders for spring delivery.

Order early to avoid disappointment.

I am Pacific Coast Agent for Reliable Incubators and Brooders—the best Incubator on earth. Write for catalogue and net prices laid down at your door. I have a few extra fine breeding cocks and cockerels that I will sell at a reasonable price.

F. A. MASON, Manager.

Southern Chief DISC PLOWS

Built with Special Reference to the Requirements :: of PACIFIC COAST Farmers and Orchardists ::

These plows are made entirely of steel, malleable and cast iron. They are well braced, strong and easily controlled. The three disc can be converted into a two disc, and the four disc is easily changed into a two or three disc. A farmer having a two disc can make a three disc by securing the extra parts.

LEVER RODS SLIDE THROUGH ADJUSTABLE CONNECTIONS

Keeping the Levers and Operator Always in the Same Relative Positions.

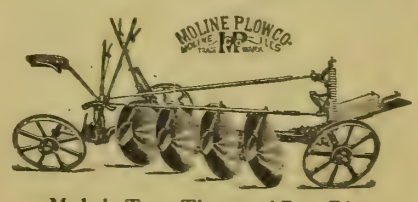
The location of seat, wheels and hitch are right, giving good penetrating power and permitting of turning to either right or left. The front wheel is under control at all times and the plow can be steered at will.

The Orchard Axle Attachment

with which either size of these plows can be equipped is a splendid thing for orchard plowing, and especially where it is desirable to work up under the branches close to the trees.

Permits of Closer Work than Can be Done with a Walking Plow

The plow with this attachment can be used for general work as well as for orchard plowing.



Made in Two, Three and Four Disc

SIMPLE WITHOUT SACRIFICE OF STRENGTH, AND THE QUALITY OF WORK CANNOT BE EXCELLED BY ANY DISC PLOW AT ANY PRICE

All levers are convenient for the operator, easy to control in raising or lowering plow and for guiding purposes. The bearings are long and made of chilled cast iron, insuring wearing qualities. The foot trip for rear wheel permits the plow to turn either way, and also serves as a raising lever. The method of raising and lowering front furrow wheel is sure to be a source of delight to the operator. It does away with the inconvenient lever in general use, which is usually too long on a two disc and too short on a three disc. The elacticity of the spring board hitch relieves the plow of dead shock and severe strain.

ASK YOUR DEALER TO SHOW YOU THESE PLOWS

Send us your name and address, enclose four cents in stamps to pay postage and mailing, and we will send you our Flying Dutchman Song Book and Junior Catalogue Combined, containing Twenty-six Old Familiar Songs with words and music.

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Makers of the Famous Moline Plows and Other Flying Dutchman Farm Tools, Mandt Wagons and Bob Sleighs, Light Running National Manure Spreader and Henney Buggies

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The Best Condition Powder Made

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Just Right for Making Them Grow

EGG-MORE
For Quick Moult and More Eggs

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For the Little Chicks

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Makes Hens Hustle for Health

WEST COAST POULTRY TONIC
A Condition Powder par Excellence
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(Liquid) for the Houses and Perches

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For Chicken Pox and Swelled Head

WEST COAST HEALING POWDER
Sure Cure for Saddle and Collar Galls

BILLE'S GOPHER POISON
Fixes Squirrels Too Good and Plenty Every Time

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MOHAIR GROWERS ASSOCIATION.

Mr. F. A. Pierce suggests that this paper organize a marketing association for the mohair growers of the Pacific Coast. The work of organizing a business association of this kind is outside of our regular work and we are not able to undertake it. Our columns are freely open, however, to those who are willing to undertake the work of effecting such an organ ization. An association to cover the ground suggested by Mr. Pierce will take a good deal of time to perfect. It will need a substantial capital and will require the services of a thoroughly competent business manager and of an experienced and reliable mohair sorter. Such men can not be picked up quickly and without them the work of the association will not be apt to give satisfaction. It is not too soon to commence work now on an organization to get it ready to handle the clip of 1908. It is too late to get one in working order for the clip of 1907. We have frequently pointed out the fact that ungraded pools of mohair must inevitably defeat their object in the long run, but they are frequently helpful as a temporary expedient. With the amount of mohair now produced in Josephine county and under the existing conditions it will probably pay the mohair growers of the county to pool their coming clip. If in doing this, they make a local organization of some strength, provision can be made for deducting a small percentage of the proceeds of the pool as a fund to be used toward the organization of a Coast marketing association. Unless the mohair growers of a county are willing to get together in a local organization and contribute their pro rata share of the expenses of forming a general association it is useless for individuals to go on with the work. If a pool of the coming clip in Josephine county is organized, send a notice of the fact and of the date of sale and the address of the person or committee in charge of the sale to this paper and it will be published free of charge. Oregon Agriculturists.

DEVELOPING THE DAIRY COW.

Calves should be fed in such a way as not to impair either growth or digestion, for later on we are going to ask them to take care of a lot of feed so that they may develop and be profitable animals. If fed and cared for in a careless and harmful manner their digestive organs are impaired.

Discussing the subject in an exchange, Mr. M. Stinson says:

"I am still a believer that heifers should not freshen too young. If allowed to drop their first calf at from 28 to 30 months of age they will get a little more growth and strength, and we believe their digestive capabilities are also strenghtened.

There are many things that enter into the development of the dairy cow, and possibly if one was dropped the best results could not be obtained, and the man that uses that part of his body above his ears the most freely usually succeeds best.

We have come to believe that a large part is due to the feed. The organs of digestion, like the other organs and muscles of the body, are developed best by constant use. The breeder that through neglect has not provided in some way for the emergencies is short-sighted.

We all know that when a cow once shrinks in her milk how hard it is to get her back, and quite often it is impossible, even with the best of feed; so it stands us in hand to provide in some way for these times, and either have some soiling crops growing or enough silage stored up to supplement the short pasture of summer; also to supply succulent feed for winter use.

I believe there is such a thing as compelling success. Every breeder should have such a complete understanding of his business and the individual needs of each animal so that there is no time in the year when she may not have an abundance of good, rich, juicy foods, best suited for milk production. The successful development of cows rests largely on the breeder's equipment.

LOSING COLTS.

Experience has taught one farmer to avoid allowing a mare with foal to see a slaughtered animal or smell blood, as the result, he claims, will be the loss of the colt. He says:

"There are some people who are inclined to doubt this. One trial, however, will usually convince them otherwise. One instance that we know of will prove the truth of what we say; we could give others. A farmer had killed a hog that he found too heavy to raise by hand. A mare in the barn was harnessed, so he brought her out to use in hauling up the carcass. She was a quiet old mare, and paid no attention whatever to the carcass. In three or four days, however, the chances of a live colt in the spring were out of the question."

"By the way, dear," began Mr. Bluffington. "I met a fellow today"——

"Yes," interrupted his wife, "I know."

"Eh? How do you know?"

"I smelled it on your breath."—

The Great American Hen.

The greatest thing in the United States today is the hen. Her portrait "rampant" ought to appear on every dollar, half, quarter and dime that Uncle Sam puts out; for the actual fact is "Biddy's" business brings in more of those same dollars, halves and quarters than any other single— and I might almost say double—American industry. Three hundred million dollars' worth of poultry products is "Biddy's" yearly contribution to the farmer's pocketbook, and if the exact truth were known, a goodly number of those three hundred millions were **made by men and women who have studied how to feed the hen.**

Such men use good, sound, chicken sense. They begin with young chicks, and follow a consistent system of feeding all through the life of the hen; using with the regular ration, that wonderful discovery of Dr. Hess—Poultry Pan-a-ce-a—which builds healthy flesh, bone and feathers, and makes early laying a habit. Now let me say right here that Dr. Hess Poultry Pan-a-ce-a is not a stimulant. Rather, it is a health-giving tonic, which helps the hen to get out her food all that Nature would otherwise supply.

Poultry Pan-a-ce-a helps the hen to digest her food properly, which of itself gives her health and vigor. It aids assimilation—every grain or particle of food goes where it is most needed, to build bone, flesh, feathers, or to make eggs, so that the greatest possible good is realized in the least possible time.

The saying that "an ounce of prevention is worth a pound of cure" is doubly true in the poultry business. The wise hen man cures his hens before they get sick, and his one certain agent for doing it is Dr. Hess Poultry Pan-a-ce-a.

Poultry Pan-a-ce-a and Instant Killer are the result of long study and experiment under just such conditions as the farmer meets with in his own yards.

Dr. Hess & Clark, of Ashland, Ohio, are so confident of the good you will get from these preparations that they are willing to give a written puarantee with every package. The cost is so small it's hardly worth considering.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

The Vegetable Garden

By ERNEST BRAUNTON

The Banana

THE people of the United States consumed over seven million dollars' worth of imported bananas in the year 1902. Each year the importations are increasing and at the rate of nearly a million dollars per annum in value. A West India Bulletin states that in the height of the season, upward of twenty steamers per week leave Jamaica alone laden chiefly with bananas for the markets of the United States.

Comment is unnecessary upon what this trade has done for Jamaica, particularly since the decline in the sugar industry. Banana growing is today one of the most profitable industries in that island, notwithstanding the fact that tornadoes sometimes destroy whole fields. Further, the indirect influence which this trade has had upon tourist travel can not be easily estimated. The frequent passage of steamers has attracted thousands of people to the West Indies to spend the winter.

Soil Requirements.

There are two essential features of a good banana soil. The first is abundant moisture, the second, good drainage. It is true that the banana makes a large demand upon the fertility of the soil, especially upon the supplies of potash; but if there is a lack of plant food it may be made up in fertilizers. It is of first importance that there be a plentiful supply of moisture at all times, and quite essential that there should be good drainage. Stagnant water is very injurious.

Temperature and Location.

The banana will endure quite low temperatures, but commercially it is a tropical plant and grows most rapidly and luxuriantly in high temperatures. This is an important factor in determining the location for a banana plantation.

At sea level the Chinese or Cavendish banana will fruit in about twelve months from planting, but as the altitude increases and the air becomes cooler, the time required for fruiting is greater. The element of time, with its results in the number of bunches per year, is a factor to be reckoned with when judging of the suitableness of a given locality for this industry. Bananas do not require shade, as coffee, and trees are simply in the way and use up food which should go to the crop. To do this will require some expense at the beginning, but incomplete clearing is a doubtful economy and can only be regarded as a compromise to be made when capital is lacking. A cleared field means: 1st, Cheaper tillage; 2d, better tillage; 3d, larger crops of high-grade fruit; 4th, greater facility in handling the crop.

AUSTRALIAN STRAWBERRY CULTURE.

In making a new plantation of strawberries virgin land should be selected if possible, or, failing that, land that has been down in pasture for a few years is the next best. It has been the experience of most strawberry growers that land which has been in cultivation for a few years does not produce good crops of fruit. A rich loamy soil is one of the best for strawberries, although some varieties thrive well on a stiffer soil, and good crops have been obtained from very sandy soils, in the granite soils good crops of fruit have been grown.

In preparing the land for planting, it should be ploughed in the springtime to a depth of 9 to 10 inches, and hoe. In small plantations where the work is done by hand, 2 feet apart in allowed to lie fallow till the summer. If weeds should appear, give a good scarifying with the disc scarifier, and then level all down with the ordinary harrow. Later a second ploughing should be given, and the land gathered into lands 24 feet wide if the soil is dry, and lands half that distance if the soil is at all damp; give a good harrowing, and the ground is then fit for planting as soon as rain comes.

The earlier the plants can be got in the better for a good spring crop. They should be planted in rows, 3 feet apart, and about 1 foot in the rows from plant to plant. This gives plenty of room for cultivating with the horse the rows would be sufficient. After the plants have been put out, it is necessary that should be kept clean from weeds. On this depends a good deal of the success of the plants the first year, and will involve a good deal of labor in hoeing and weeding; weeds take a good deal of killing in the winter time.

Keep the beds all clean and free from weeds in the spring time when the plants are in bloom. It will then be necessary to mulch the plants with straw to keep the fruit clean. Some growers mulch with long manure, but this is objectionable. Others use spent tan from the tanneries, but it is apt to promote fungoid growths, which are detrimental to the plants. On the whole, clean straw or dry grass is much the best material to mulch with. During the summer keep the hoe going occasionally to keep the weeds down.

Crimson Winter Rhubarb

Original Burbank Strain

$1.50 per Doz., $6.00 per 100, $40 per 1000

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P. S.—See Article in Cultivator on Page 550, issue of December 6th.

The Famous **Klondike** and **Mammoth Brandywine Strawberry Plants** For Sale.

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PUGET SOUND SPECIAL TOMATO.

This miniature, from a photograph, gives you an idea how the tomato produces. Is an early dwarf, stands free from the ground, with hard, firm, round stalks. Yields large clusters of round, firm, luscious fruit, beautiful rich color, free from blemish, stands shipment splendidly. A three-season leader; popular everywhere. Perfected by us on our experiment grounds at Brighton Beach, and can be obtained solely from us. Sold only in sealed packets. Ounce, 60c; packet, 10c.

GOLDEN JERSEY WAX BEAN.

Brittle, tender, broad, thick—the best of all the yellow pod bush beans. Stringless. Beautiful golden color and delicious flavor. Vigorous, reliable, and an abundant producer. ½-lb., 25c; packet, 10c.

JACK FROST SWEET CORN.

Plump, milky kernels, that melt in your mouth; tender, sweet, prolific—really phenomenal. Dwarf variety, permitting close planting. Very hardy. Jack Frost seed has been perfected by ourselves on Puget Sound, is thoroughly acclimated and peculiarly adapted to Pacific Coast conditions. Not only season's earliest, but longest and latest producer. We cannot say too much in endorsement of this corn. Large packet, 15c.

LILLY'S GLORY CABBAGE.

Glorious in flavor, gloriously sound, a glorious grower and a glorious shipper. Lilly ships tons of this cabbage seed across the continent, as this variety, perfected on Puget Sound, is admitted to be the best cabbage grown. Even rounder and more solid than the Danish Ball Head, and infinitely better adapted to Pacific coast conditions. True to type, every head like its neighbor, symmetrical, white inside and solid to the core. ¼-lb., $1.25; 1-oz., 35c; packet, 10c.

PRIDE OF THE PACIFIC CUCUMBER.

Almost a seedless cucumber, the seeds being small and few. Perfectly smooth, very dark green, beautiful white flesh, perfect cucumber flavor, exceptionally firm, crisp and delicious. Grows 10 to 18 inches long, always straight, and dark green until ripe. Vine hardy and vigorous; enormously productive; yields early and late in season. ¼-lb., 65c; 2-oz., 40c; oz., 25c; packet, 10c.

ENGLISH FORCING LETTUCE.

Large, crisp, tender; best variety for home culture, because easily grown outdoors or in frames; rich color, ideal for garnishing. Hotels gladly pay one-third more for this lettuce. Stands more neglect in watering, and does not quickly run to seed. Most profitable for market purposes because quickly ready in fine large bunches of beautiful light green, which never spot. ¼-lb., 50c; oz., 20c; packet, 10c.

MT. RAINIER PEA.

Dark, rich green, well-filled pods, creamy and delicious; enormously productive. Propagated in Washington, and the best early pea ever offered to western growers. Especially valuable for market gardeners, commanding the highest prices through the season. Large packet, 10c.

CRIMSON GLOBE BEET.

Close grain flesh, very sweet, tender, blood red, delicately zoned with white. Exceedingly smooth surface. Finest in form, flavor and color. Free from woody, fibrous roots. Grows uniform in size—about three inches through. Matures early. Pkt., 10c.

GOLDEN HALF-LONG CARROT.

Best of all the yellow varieties. Very sweet, close in texture, golden yellow, solid, very smooth, attains large size, has small core, and adapted to all soils; under good cultivation yields 25 to 30 tons per acre. Ready for table at all times during growth. Equally valuable for stock. A market favorite. ¼-lb., 25c; packet, 10c.

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The larger it grows the solider it gets; twice the ordinary size. As hard as a bullet, while tender and deliciously crisp. Retains goodness long after maturity. ¼-lb., 40c; packet, 10c.

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Above prices are postage paid.

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LILLY'S 1907 SEED CATALOG,

Which will be sent free, postpaid, on request. Lilly's 1907 catalog surpasses all previous books in attractiveness and completeness of plant information. It is thoroughly dependable, and besides containing descriptions, price lists and culture directions of thousands of varieties of seeds, bulbs, roots and cuttings, it is a handbook of information on poultry foods, poultry supplies, stock foods, fertilizers, garden supplies, sprays, horticultural supplies, etc. If you want one, free, mark an X in the white square.

HOW TO ORDER.

Mark an X in each white square opposite the variety of seed you wish to order, mark the quantity in square or on margin, figure up the total, clip out the ad., and remit in same envelope with the clipped ad. Be sure and write your name and address plainly, filling in the following blank:

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Enclosed is $....., for which please send me $..... worth of Lilly's Best Vegetable Seeds, as marked above.

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With the Citrus Growers

By J. W. MILLS

Economy in Fertilizers

WE WERE recently asked, "what is the most economical way to use commercial fertilizers?" This is easy to answer up to a certain point. There is no use of putting on fertilizers when conditions are such that the trees cannot use them. In other words, if the material is in an unavailable form the plants can't get hold of it, no matter how much there may be of it.

When soil is in the state where it will run together and pack tight every time it gets wet, there is usually a condition that indicates a lack of humus. Soil without humus is known to be slow in giving up its elements of fertility. There is abundant evidence that land that is rich in humus may contain much less plant food than some that produces much poorer crops. The reason for this is that the acid contained in humus and which is known as humic acid, holds in solution when wet, a very large quantity of the plant food contained in the soil. We are perhaps all aware that some soils prove unproductive, but upon an analytical test, show that they have a higher percentage of plant food than soils which produce much more. The story of Prof. Bailey and his three samples has often been told, but it is a good illustration and bears repeating. He was anxious to know something definite about this humus business, also the extent to which soil analyses could be depended upon. He took a sample of soil from the garden where the loam was rich, judging from the crop produced, a sample from a barren clay ridge and a corner of adobe wall. The adobe wall contained the highest percentage of plant food, the clay hill soil the next highest and the "rich" garden loam contained the smallest percentage of plant food, but it contained a much larger percentage of humus than either of the other two soils. That was the secret of its productivity. This striking example furnishes an easy answer up to a certain point, to the question, "what is the most economical way to use commercial fertilizers." The rest of answer may be in telling how to get the humus into the soil. Much humus cannot be put into the soil without breaking away from the old method of clean culture. Perhaps 90 per cent of the orange growers of Southern California have done this, but there are occasional groves in which the old clean culture method is still pursued.

After the soil is supplied with humus, there remains the question of amounts, time of applying and other questions which cannot be answered except after considerable experimenting. An experiment on one kind of soil will not give an answer that will be applicable to very many places, but it will furnish a guide by which all can make a start and the peculiar requirements of the various classes of soils will in time be worked out. It is our candid opinion that with soils which contain an abundance of humus, there will not be a very great difference in brands of commercial fertilizers just so long as the required elements are there. It may be that raw bone for instance will give just as desirable results as a more available form of phosphate.

This has been found true to a certain extent, but it has not been demonstrated in California. It is known though, that in the peatlands of Orange county, a dressing of commercial fertilizer gives more definite and quick results than on lands poorer in humus. The lands are so rich that it would seem folly to fertilize them. This is evidence that should encourage planting of green crops for fertilizers. The orchards of California have had clean culture for so many years, that the soil is in a great many place almost completely depleted of its humus. Stable manure has been the saving grace in almost every instance. This is expensive fertilizer, but the great demand for it is evidence that its good effects are apparent and while most growers attribute its beneficial effects to the direct fertilizing qualities, there is little doubt but that as much benefit is derived from the humus it delivers to the soil.

TO ASSIST FRUIT GROWERS.

The Bureau of Plant Industry of the Department of Agriculture at Washington is always willing to assist those who want information with regard to plant diseases, and has published the following instructions for those wishing to deal with the bureau:

When the farmer or fruit grower is in doubt regarding the character or name of any plant disease with which he has to contend, it is best to write to the agricultural experiment station of this State or to the United States Department of Agriculture, sending specimens for examination as hereafter directed. In most cases printed matter containing full account of the disease and its treatment can be furnished without cost.

Persons desiring to consult the department or a State Experiment station regarding any plant disease should write a letter stating the facts in the case, and if specimens are sent, giving notice of the same. This letter should not be enclosed in the package containing the specimens.

Packages containing specimens of diseased plants sent by mail are rated as fourth-class matter and require postage at the rate of 1 cent an ounce (16 cents per pound.) No written matter may be enclosed with the specimens except the outside of the wrapper.

No package may weigh over four pounds. Nothing should be sent that can in any way injure other mail matter. Liquids must be in tight bottles, packed in approved mailing cases. Postmasters will give all necessary information on request.

If the plants are small, send them entire, including roots. Loose dirt should be carefully shaken or washed off. Samples of the soil are not needed, and the dirt often injuries the specimens in transit. Choose plants representing various stages of the trouble. In the case of many leaf diseases, wilt and diseases of fruits, the earlier stages are usually most satisfactory. All stages should be sent. Fleshy or moist, watery material likely to become decayed or offensive while in transit should be packed as dry as possible. If the material is very perishable, dry completely, or preserve in alcohol, before sending.

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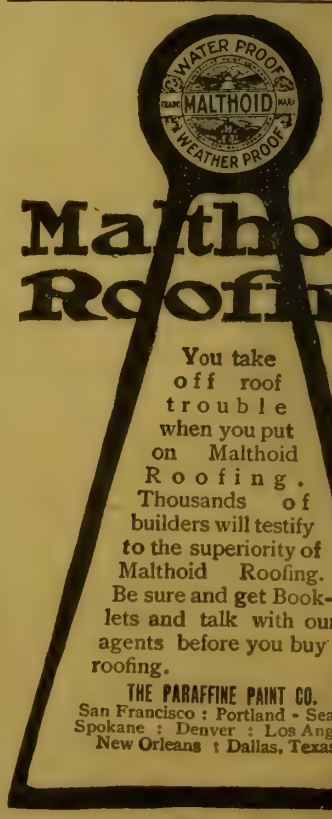

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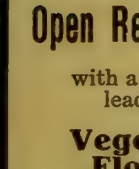

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identification easier. If the specimens consist of leaves, straighten them out between layers of newspaper. If they are stems or solid parts, wrap each in dry newspaper. Fruit likely to be crushed should be sent in small strong boxes. Do not pack moist. As a rule, specimens carry best if sent while fresh, without moistening the wrappings, while an excess of moisture causes mold and decay. Never lay wet cotton against specimens, as it sticks to them. In sending several fruits, wrap each separately in tissue paper.

The name of the plant and the place and date of collection should be written on a slip of paper and enclosed with each specimen. When the name of the diseased plant is not known, as in the case of wild species, send flowers or fruits from healthy plants to aid in identification. If the specimens sent are mentioned in your correspondence, number them and refer to them by number.

When material is sent by express, the cost of sending should be prepaid.

THE UNAPPRECIATED POMELO.

It is interesting to note that the Pomelo was either unknown to or disliked by horticultural writers, but a few years ago, or confounded with the Shaddock even up to very recent years. Alexander Watson in 1859 wrote the following: "Shaddock is a still larger fruit (than the citron,) in form more resembling the orange, curious, but worthless." W. N. White, in 1867 says: "Pulp dry, sweetish or subacid, but not very desirable, except for its showy appearance." Rev. T. W. Moore, in his Hand Book of Orange Culture, 1881, does not mention it. Thomas in his Fruit Culturist makes no reference to it up as late as the edition of 1885. William A. Spalding in 1885 makes the following remark: "Meanwhile the Pumalo and its congeners when allowed growing space continue to load themselves down with fruit as large as foot balls. They are matters of wonder and that is all." Charles Downing (1885,) under the head of Shaddock, has the following note: "The pulp is sweetish or subacid and the juice is rather refreshing. It is, however, more showy than useful, and certainly makes a magnificent appearance in a collection of tropical fruits."

CARE OF PRUNING SAWS.

With a little care saws may be kept almost as bright and clean as they are when purchased. After each time they are used they should be cleaned of all sawdust and wiped off with an oiled cloth to prevent rusting. Rust ruins a saw. Nothing is more aggravating than to have to use a dull saw or one with an insufficient amount of set. The pruner should see to it that his saw is well sharpened and that the teeth have sufficient set to clear the cut. For use in green wood more set is needed than for cutting seasoned wood. To give additional "clearance" in cutting some pruning saws are thicker along the teeth than they are along the back.

"Remember," said the melodramatic man, "there are things in this life that money cannot buy." "Yes," answered the impecunious person wearily, "but I had enough of them long ago. What I want now is a change."

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California Cultivator

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RECIPROCAL DEMURRAGE.

From every important fruit growing section in the Union has gone forth the appeal to the railroads: "We want more cars." Each succeeding year the cry has been louder and more urgent until during the past few months it has developed into a demand to which the transportation companies dare no longer turn a deaf ear. In many fruit shipping centers, industrial paralysis has been the result and much of the shortage has been due to unjust discrimination. True it is, that with crops so abundant as to have no parallel in our country's history, the capacity of the railroads has been severely taxed, yet those who have fully informed themselves on the subject are very decided in the statement that the more powerful industries have been furnished with all needed rolling stock and that the unorganized and therefore unprotected fruit growers have been discriminated against, with most disastrous results.

The plea of the larger railroad companies that they lack cars, and locomotives to move them, will not suffice when we know that for years they have sucked the lifeblood out of the fruit industries of the Pacific Coast and have, through other like channels become so bloated with wealth that one man has been dubbed "Railroad King," and has at his command so many countless millions that he could buy the entire railroad mileage of the nation. Money they have in plenty and money will at all times buy cars or equip factories to build them, and one of the two they will do, for the people are no longer to be trifled with and are demanding their rights in no uncertain tone.

Up in Oregon at present the people have before their Legislature, three bills that seem destined to change the entire situation and bring about a just return to the people of those powers and priveleges guaranteed by the constitutions of the State and Nation. The Oregonians are asking their Assembly for: A reciprocal demurrage bill, a maximum rate bill, and a railroad commission, but the first heavily overshadows in importance the other two. It has been the invariable practise of the railroads to charge a demurrage of ten dollars per day for all time a car is held, either to load or unload, after the first twenty-four hours. It is now proposed to have the rule work both ways and after a demand is made for cars the railroads will be forced to pay the same amount per car each day after the first until the demand is met.

To California, more than to any other State in the Union such a law would prove an emancipation proclamation, for the fruit growing industry most assuredly represents the lifeblood of the commonwealth and the transportation vampires have sucked at it so persistently that at times our arteries and veins have been well nigh empty and our fruit growing body on the verge of collapse.

PANIC? NO.

Stuyvesant Fish, who was relieved of the presidency of the Illinois Central railroad recently, has been making some pessimistic prophesies about a panic to come in the near future. His observations are influenced, no doubt, by his personal feelings. He had a conflict it is said with Harriman, and lost out. He naturally feels morose and everything he looks at takes on a morbid hue.

He says, the country is going to see a wide-spread panic in 1908; that Wall street has gone crazy on stocks; that mining investments have depleted the common people and that money is going to be very dear. All these observations, it will be noticed, he makes since his abdication of a position, which paid him a very fat salary.

Now the truth is we have had several "panics" in the last year if we gauge monetary conditions by the rule that used to be laid down in the days of Jay Cooke. Several times the banks have ceased to loan money to speculators, even business men have suffered inconveniences in obtaining necessary funds to transact their affairs. Still there was no "panic."

Had we been in the condition we were in twenty years ago we might have had a genuine panic. But the difference is in this. The county has an agricultural basis today it did not possess then. There are many hundreds of millions of dollars in the hands of the people more than there were at the time Jay Cooke failed and created a general tie up of industrial interests. The farmers are all in good condition. They are, as a class, free from debt, they may be said to be independent.

Secretary Wilson says, the farmers of the United States are the richest class of agriculturists in the world. So long as this condition obtains there can not be any wide-spread panic to affect the country. Stock gamblers may go broke; we do not care if they do. Crazy real estate investors may be caught, but they might expect to be when they attempt to do business without capital. But these interests will not be sufficient to plunge the country into a disastrous financial era of loss. We may see a short period of hard times; we may have to curtail expenses; we may see a few trusting over-confident banks go down, but these will only be in localities; of country at large will be all right because the farmers are sound. Remember that. The farmers are independent, and the farmers are the backbone of the Nation.

In direct opposition to Stuyvesant Fish's views are those expressed by George Gould, the president of many railroads and a great continental road builder. He says:

"The business conditions of the country look very encouraging and the immense volume of business done by the railroads in 1906 will not only be equaled, in my judgment, but surpassed during the present year. There is no industrial crisis, and while the market has declined recently it is my belief that it is a temporary but healthful reaction."

Both men are speaking of the immediate future and as we see no signs of an immediate business breakdown we incline to take Mr. Gould's view and to say, that the outlook justifies the belief there will be no panic very soon.

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Send us answers to the following questions, and we will furnish you preliminary estimate of the **cost of installation** and **cost of operation** of your plant.

1. Do you pump from bored well, river or ditch?
2. If from river or ditch give diagram showing elevation and character of soil.
3. If from bored wells state number and size of each and distance from centre to centre.
4. Have you a pit? Give size and depth.
5. How far from surface to water level?
6. Gallons per minute desired.
7. Has well been pumped? How much does the water lower?
8. Height above ground water is to be elevated.
9. Length of discharge pipe. State kind and size to be used.
10. What experience have you had with power?
11. Have you decided on pump; if so what make?
12. What part of the plant do you want us to contract for?
13. When do you want plant installed?
14. Do you want us to install plant? If not, who?

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News of Country Life in the Golden West

Southern California

AGRICULTURE.

The rain at Rialto registered 1.07 inches, which makes 11.41 inches for the season.

The total for the big storm at Santa Paula was 8.82, making 15.70 for the season, against 1.70 for last season.

The rains have transformed the Santa Ana from a peaceful creek to a surging river, with an estimated flow of 30,000 inches.

The total amount of rainfall for the season at McPherson is 7.54 inches, which causes rejoicing amoung the farmers of that region.

Mr. Getty's rain gauge at Tustin, showed an even four inches of rainfall for the storm Saturday to Wednesday night, making 8.89 for the season.

There is being shipped from El Centro some twenty-five cans of cream each day for which the ranchers are credited about 800 pounds of butter fat.

A total of 12.53 inches for the season, and 3.25 for the past week is the dampness registered at Redlands. That looks like a 25 inch rainfall for this year.

The rainfall in Riverside for the present season, is now 8.52 inches, only .48 short of an even nine inches. The total for the present storm of this week was 1.64.

Wednesday Lake Hemet was 116 feet 3 inches deep. On the 7th an inch and a quarter of rain fell and on the 8th one and a half inches. Three inches of snow also fell this week.

E. E. Forrester, who lives about three miles west of El Centro, raised a sweet potato that weighed just 52 pounds. In size it was somewhat larger than a nail keg and was of fine grain.

According to the rain gauge, at Fullerton the rainfall from January 5 to January7, inclusive, was 3.40 inches, and the total rainfall for the season is 8.90 inches, more than double the amount that had fallen at this date last season.

The heavy bean crop of the vicinity of Oxnard was nearly all sold during October and November, only five carloads going out in December. They have now in the warehouse about 30,000 sacks, but they are also sold at prices ranging from $3.85 to $4.00

Farmers near Greeley, Colorado, raising beets for a large sugar factory near that point, have issued an ultimatum to the sugar trust, controlling the factory, that they will not raise sugar beets next year unless they secure a contract of a five dollar flat rate for their products.

Fred McIntyre, the cattle man of San Jacinto, reports that prospects in the valley are fine for cattle feed. New grass is coming on nicely and the beeves will soon begin to take on flesh at a rapid rate. The present cold weather he looks upon as a sure indicator of a warm spring with plenty of good range.

A protest was filed with the County Board of Supervisors yesterday by Attorney Ralph E. Swing, repesenting eighteen ranchers who do not want to be included in the proposed assessment district for the Redlands storm water ditch, application for the formation of which was made by several Mission ranchers some time ago.

The Addison Pump Company with offices and factory at Pomona, Cal., has recently secured the services of Joseph H. Cox as General Manager. Mr. Cox is a mechanical engineer of pronounced ability in the manufacture and operation of first-class machinery, is a tireless worker and has a good clean business record. Many changes are being made in the factory whereby the pumps can be manufactured more rapidly and at a reduced cost. The company has just completed a fine deep-well pumping plant for Mr. George Woodbury of Pasadena, and for Colonel Robert Northam near Monrovia, and are now installing one of their largest deep-well pumps for Adolphus Busch and a smaller one for Mr. R. R. Blacker, both plants in Pasadena. They have several other contracts for pumps to be installed as soon as wells are ready.

HORTICULTURE.

No small amount of native lumber from the San Jacinto mountains goes into boxes in which are packed the orange and lemon crops of Southern California.

The Oasis Orange Company has filed articles of incorporation in the county clerk's office at Riverside. The principal place of business is Riverside, and the capital stock is $81,000, fully subscribed.

E. K. Carns, of the state horticultural commission is conducting experiments in the citrus orchards at San Deigo, with the bug recently found in China, which is believed will prove a parasite for the red and purple scale.

In spite of the almost incessant rain the past week, thirteen cars of oranges were shipped from the Santa Fe depot in Orange. This makes a total of 1,825 cars of oranges and 432 cars of lemons sent East from Southern California this season.

The Southern Pacific, Santa Fe and Salt Lake railroads will make a fare of one and one-third for round trip tickets to the Citrus Institute to be held in Riverside, January 22 to 24. This rate will be good from all points south of Santa Barbara.

Last week was a very quiet one in Riverside for orange shipping, only 60 cars being sent out, and in view of the heavy rain with which this week opens, picking will be light this week. It looks now as if it would be the first of February before the present season got fully under way.

On the 10th of June, W. S. Corwin picked from his vineyard near Imperial, some of the finest grapes known. On the 10th of January Mr. Corwin picked from the same vineyard several boxes of the fine Emperor grapes. During those seven months there was never a day but the vineyard produced ripe grapes, there being four distinct crops.

Citrus Growers' Institute

Following is the program for the Citrus Institute that will be held in Riverside on Jan. 22, 23and24:

Tuesday, Jan. 22.

1:30 p. m.: Introductory—J. H. Reed, Riverside; E. J. Wickson, Berkeley.

2:00.: p. m.: Too what features of orchard management and after management of fruit do you attribute success most largely?—C. C. Chapman, Fullerton; H. H. Garstin. Redlands.

3:00 p. m.: Orchard and handling methods necessary to success with lemons— C. C. Teague, Santa Paula; R. C. Allen, Bonita.

7:00 p. m.: Music.

The practical value of scientific work as illustrated by the commercial results from G. Harold Powell's investigation—B. A. Woodford, Los Angeles, manager of the California Fruit Growers' Exchange.

Relation of the University to the new Citrus Experiment Station—Pres. Benj. Ide Wheeler, Berkeley.

Wednesday, Jan. 23.

9:30 a. m.: Question box—Director J. B. Neff. (Question to be on addresses and discussion of previous afternoon and evening.)

10:00: Discussion, If yet ascertained, what are the specific requirements for securing a larger proportion of finest fruit? Led by C. E. Rumsey, Riverside.

11:00: The important and urgent practical problems to the solution of which the Citrus Experiment Station should give early attention.—C. W. Lefflingwell, Whittier; Prof. A. J. Cook, Pomona College; discussion opened by Prof. C. R. Paine, Crafton.

1:30 p. m.: Music.

Question Box—J. B. Neff. (On mattors already discussed.)

2:00 p. m. : Further discussion on investigation needed to be taken up by the Experiment Station. Lead by F. J. Palmer, Pomona; Prof. C. B. Sumner.

3.00: Proposed Experiment Station work.—Prof. Ralph E. Smith, director of the Citrus Experiment Station; E. J. Wickson, director of College of Agriculture.

7:30 p. m.: Music.

Possibilities of improvement of citrus fruits.—E. J. Wickson.

Address, "People's Lobby." — Benj. Ide Wheeler.

Thursday, Jan. 24.

Morning: Ride to Experiment Station grounds.

1:30 p. m.: Question box.—J. B. Neff. (On matters discussed Wednesday.)

2.00: Some of the definite methods of fertilizing fruiting orchards successfully, now well determined in practice.—W. J. Barth, Corona; discussion opened by Jas. Mills, Riverside.

3:00: What definite practical progress has been made in controlling orchard insect pests?—W. J. Jeffrey, Horticultural Commissioner, Los Angeles county; discussion opened by R. P. Cundiff; Horticultural Commissioner, Riverside.

Evening: Address — Ex-Governor Geo. C. Pardee.

Northern California

HORTICULTURE.

Petaluma was visited by a genuine snow storm Sunday.

The gigantic plant which the California Wine Association is erecting at White Haven, near Pt. Richmond, involving millions of dollars, will undoubtedly have a beneficial effect upon the industry throughout the state.

Special days have been set apart by the Cloverdale Citrus Fair association for the fourteenth annual exhibit of fruits in February. The exhibition will open on Tuesday evening, February 19, and the day following. Wednerday, will be known as Cloverdale day.

Yuba county has adopted an ordinance prohibiting the importation into the county of any grape-vines or roots unless a certificate has first been secured from the state commissioner of horticulture showing that phylloxera, anaheim or mysterious vine disease has not existed in the county in which such vines or roots were propagated for the period of five years preceding shipment.

The heavest snow that ever fell in Orland is now on the ground. At 8 o'clock Monday morning the snow registered nine inches on the level, and was still falling at the rate of one-half inch an hour. The owners of the principal orange groves were out early with large crews of men shaking the snow from their trees. In a great many instances the limbs of the trees are broken, causing considerable loss to the owners.

Winehaven is the name of a new town that is to be established on the shores of San Francisco bay, near Point San Pablo, in the near future. This town will be peopled by the employees of the California Wine Association, which at present has under consstuction one of the largest wine making plants in the United States.

In some districts of Northern California, a few oranges were damaged, but as a rule the crops had all been picked before the big storm came.

AGRICULTURE.

Woodland had three inches of snow and Red Bluff eight inches during the last big storm.

John Russell brought to Hanford Monday 190 hogs that averaged 200 pounds each. The hogs are worth $6.90 per cwt.

A pasteurizing plant will be put in at Lemoore by the Maple Grove Creamery, and the plant will be in operation sometime this month.

J. B. Stewart, tobacco expert of the United States Department of Agriculture, is in Sacramento for the purpose of investigating the tobacco possibilities of this state.

The auction sale of Snorthorns at Woodland last mounth was so satisfactory that the promoters announce one for next fall, to take place on November 12, 1907.

The west side farmers in Fresno county, particularly around Jamison, are again appealing to the Board of Supervisors for something to be done to prevent the overflowing of Fish slough.

In Siskiyou county the snow is unusually deep. At Sisson there was four feet and at Dunsmuir one foot. All along the road from Dunsmuir north the telephone and telegraph lines have been out of commission.

Ninty pounds of tomatoes to a vine is a common thing about Fair Oaks, but many tons of this fine product went to waste last season on account of the long haul to market being too expensive an item in their distribution.

Bulletin 181, issued by the Department of Agriculture at the University of California, will prove interesting reading to those of our subscribers who live on the farm, and especially those who are engaged in growing wheat.

Mr. E. Brecht, an experienced German agriculturist who has been growing sugar beets for the past four or five years, has transferred his field of operation to Tulare County, and will grow 500 acres of the saccharine-producing roots.

Saturday, February 2, is the date set for the meeting of the Tehama County Stock Grower's association. This is to be a very lively and interesting meeting, and all the members of the association, beside the stockmen of the entire county, will be present.

Fair Oaks is fast becoming famed as one of the most productive agricultural communities of the state, and here diversified farming is carried on on an extensive scale. Beside other crops, the new colony is rapidly becoming known as the home of the melon.

The Sonoma County Co-operative Poultrymen's association has secured what is considered a fine contract for their eggs during the year 1907, awarded to Swift and Company of San Francisco. It is based on exchange quotations, net, in Santa Rosa, with a 20-cent minimum.

The Yuba county supervisors have adopted a resolution requesting that a soil survey be made by the United States Government similar to that being made in other parts of the state. The county clerk has been directed to formulate a copy of the resolutions to the Secretary of Agriculture.

As a result of the heavy rainstorm which has been raging for the past four or five days, the town of Coalinga has been inunated and the people of the Oil City forced to flee from their homes and pitch their tents on the outskirts of the town. The streets of the city lie under two feet of water.

In response to an appeal made by Gov. Pardee for a more speedy accomplishment of the soil surveys of the Sacramento and San Joaquin valleys, the United States Department of Agriculture has recommended that the state and national governments cooperate and that an appropriation of $45.000 be made immediately, with which the work can be completed within the course of two years.

The Largest Poultry Supplies House in the United States

LARGEST INCUBATOR EMPORIUM On the Pacific Coast

MAKERS

"LOS ANGELES" HOT WATER "PEERLESS" HOT WATER

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Granulated Milk Is made of pure skim milk, dried and ground to about the size of cracked grain. It contains 50% protein and 15% pure albumen. **$3.50 per 100 lbs.**

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You can positively make hens lay the year around if you will give Dr. Hess Poultry Pan-a-ce-a with the regular feed. During this season of the year many valuable layers are idle. In other words, the egg factories are closed down on account of impaired machinery. Poultry Pan-a-ce-a contains the best tonics known to medicine for increasing digestion, which is the all important function in egg production. This superior poultry tonic supplies iron for the blood, cleanses the liver, arouses the egg producing organs, reddens the comb and brightens the feathers.

DR. HESS Poultry PAN-A-CE-A

Is the prescription of Dr. Hess (M.D., D.V.S.), and in addition to increasing egg production, it cures cholera roup, indigestion and many other poultry diseases due to digestive difficulties and infection. It has a property peculiar to itself—that of destroying bacteria, the cause of so much poultry disease, and throwing off impurities through the skin. Dr. Hess Poultry Pan-a-ce-a has the indorsement of leading poultry associations in the United States and Canada, costs but a penny a day for about 30 fowls, and is **sold on a written guarantee.**

1½ lb. package, 35c. 12 lbs. $1.75

5 lbs. 85c. 25-lb. pail, $3.50

Send 2 cents for Dr. Hess 48-page Poultry Book, **free.**

DR. HESS & CLARK, Ashland, Ohio.

THE PETALUMA INCUBATOR CO., Petaluma, California, Pacific Coast Distributors.

Instant Louse Killer Kills Lice.

Beef Scraps Raw Bone

GUARANTEED ANALYSIS :

Protein.....65%
Fat..... 8%

Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

GUARANTEED ANALYSIS :

Protein.....25%
Phosphates.....45%

Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods

WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

Profit in the Poultry Yard

Two Notable Poultry Shows

THE second annual show of the Poultry Breeders' Society of Southern California was pulled off at Chutes Park, the first week in January. It was a crowing success in every particular, and left the treasurer about $500 to the good. The entry was large, the quality was high, the exhibitors, as a rule, were pleased with the awards. In fact the show was a credit to Southern California. Good shows are a sure indication of the prosperity of the poultry business, for the fancy form the backbone of the poultry industry.

The show was well cooped, and Superintendent Andrews is to be congratulated for the able manner in which he handled the birds.

There were more silver cups offered at this show than had ever previously been offered at any show held in Southern California, which stimulated and helped to make it a success. Where so many special premiums are offered, competition is naturally very strong, and in this show everyone expected to see strong competition; but a great many surprises were in store when birds began to arrive that had won prizes all over the world. As the judging proceeded, much interest was manifest, for there was a battle-royal in many classes.

The managers of the Breeders Society are all fanciers of the "purest ray serene." and gave much thought and hard work to the details of the show, looking after the exhibits and extending courtesies to the visitors.

The largest exhibitor was the Holmby Poultry Farm of Hollywood, Mr. Arthur Letts, proprietor, and Mr. Purdy manager. We understand there were between 250 and 300 birds in this exhibit, and it was the largest exhibit ever made by a single exhibitor in Southern California. In the exhibit were Orpingtons that had won at the largest show in England, recently imported by Mr. Letts. It also contained the finest string of Black Orpingtons ever shown in the United States. Mr. Letts was also strong in Buff, Jubilee and White, winning many rich prizes, including a "baker's dozen" silver loving cups. The exhibit also contained some fine water fowl and turkeys.

Mrs. Rhoda E. Durfee of Santa Ana, came up with a strong line of White Plymouth Rocks, and was successful in winning her share of prizes.

Some of the Winners.

Following we give a list of the winnig of the principle exhibitions, as nearly correct as we were able to obtain them:

BARRED PLYMOUTH ROCKS—Fred Espe, Los Angeles, 1st cock, 1st, 2d, 4th, and 5th cockerel, 2d & 3d pullet 1st, 2d, & 4th pen.

WHITE WYANDOTTES.—White Wyandotte Farm Inglewood, Cal., 1st, & 2d, cock; 1st, & 2d, cockerel; 1st, & 2d, pullet; 1st, & 3d, hen; 1st, & 3d, pen. Mary Van Brunt, Hollywood, 2d pen and silver cup. Willard Poultry Farm, Hynes, 3d cock. C. L. Berky, Fullerton, 2d, 4th, & 5th hen, 3d cockerel, 3d pullet, 4th pen.

BUFF WYANDOTTES.—L. E. Berky, 3d, 4th, & 5th cock. C. S. Hoffman, San Jacinto, 1st & 2d cock, 1st, 3d, & 4th cockerel, 2d & 3d, pullet, 3d & 5th pen, special for best colored male, special for best shaped male, cup for best display.

PARTRIDGE WYANDOTTES.— L. E. Berky, 1st, 3d, 4th, & 5th cock; 1st & 2d hen 1st cockerel 4th & 5th pullet, 1st & 4th pen, cup for best display. C. Andrews, Hollywood, 2d 3d & 4th cockerel, 1st 2d & 3d pullet, 2d & 5th cock, 3d hen, 2d & 3d pen.

COLUMBIAN WYANDOTTES.— Ed. M. Burnell, South Pasadena, 2d 3d & 5th cock, 1st 2d & 5th hen, 2d 4th & 5th cockerel, 1st 3d 4th pullet, 2d pen, cup for best male and female, five special ribbons. Frank J. Ironmonger, Hollywood, 1st cock, 3d cockerel, 4th pullet, 4th pen.

RHODE ISLAND REDS.— Frank Greenleaf, Santa Ana 1st pen, 1st hen, 2d & 3d cock, 3d pullet, 4th pen. Goodacre Bros., Compton 5th cockerel,

BUFF ORPINGTON.— P. L. Harley Redlands, 2d cockerel, 3d hen, cup for the best female. Ross & Tate Altadena, 4th cockerel, 3d pen. Goodacre Bros. Compton, 5th cock, 5th pen.

BLACK ORPINGTONS.— Ross & Tate, Altadena, 4th cockerel. P. L. Harley, Redlands, 2d cock, 5th cockerel, 3d pullet, 4th & 5th pen.

WHITE ORPINGTON.—P. L. Harley, Redlands, 1st cockerel, 1st & 2d hen, 3d & 5th pullet, cup for best pen Ross and Tate, Altadena, 4th cockerel 2d pullet, 3d pen.

ROSE COMB WHITE ORPINGTON. —Goodacre Bros., 1st & 2d hen, 1st cockerel, 1st pen.

BLACK MINORCAS.—Perham and Wheeler , Lordsburg Cal. 1st & 3d cock, 1st 2d & 3d cockerel, 1st 2d 3d 4th & 5th hens, 1st 2d 3d 4th & 5th pullets 1st, 2d, pen, cup for best male in show and President's cup for best display.

WHITE-FACED BLACK SPANISH.—Mrs. O'Connor, Dolgeville, all awards.

BLACK-TAILED JAPANESE BANTAMS.—LeRoy Burrell, South Pasadena, 1st cock, 3d 4th hen, 1st 2d cockerel, 1st 2d 3d & 4th pullets 1st 2d pen and 3 cups. J. Lynn Ironmonger, Hollywood, 2 cock, 1-2 hen

GOLDEN SEABRIGHT BANTAM— C. Andrews, Hollywood, 1st cock, 1st hen.

PEKIN DUCKS.— Goodacre Bros., 3d young drake 1 st young duck cup for best pair.

BUFF ORPINGTON DUCKS.— Goodacre Bros, 1st drake, 1-2 duck.

COUNTY SHOW.

The Eighteenth Annual Exhibit of the Los Angeles County Poultry Association has passed into history, and in spite of the unfavorable weather, proved a success; and we understand that although the expense was enormous the show payed out.

The Panorama Building where the show was held, was the best place for a show on the coast, and was by far the largest hall in the city.

We are sorry that space will not permit us to go into a detailed description of the various breeds and varieties. Besides the extra large show of the better known varieties, there was a large display of Bantams—perhaps the largest ever shown on the coast. There were also about 500 pigeons of every known variety and a fine display of Pheasant, Pea Fowl, native Jungle Fowl, Ostrich and Turkey. Taken as a whole, it was the largest variety of fowls ever exhibited at a

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WHITE, PARTRIDGE AND BUFF
WYANDOTTES
Won 26 Ribbons and Special Prizes at the Poultry Breeders' Show, 1907
L. E. Berkey
R. F. D., Box D87 Fullerton, Ca'.

poultry show either east or west.

Following we give a condensed report of each judge on the varieties he judged:

Judge Hogue.

The Black Langshans were a good class, and there were some extra fine pullets and hens. The White Minorcas were good. The Buff Wyandottes were one of the three larger classes of the show; they were a magnificent class all through. The first prize cock was perhaps the finest shaped Wyandotte that was ever shown in California. Judges Barrar and Browning gave him the medal for being the best-shaped Wyandotte in the class. The Silver Laced Wyandottes were a small class but exceedingly fine. Black Hamburgs were good. The Pit Games were a large class with some wonderful specimens. The Golden Wyandotte was a nice class with many choice specimens, especially the first prize pen. The Partridge Cochins were good, and pronounced by Judge Barrar as the best he had seen for years. The White Crested White Polish Bantam was one of the features of the show, and contained many good specimens. As a whole I was much pleased with the classes I handled.

Judge Barrar of San Jose.

All the classes I handled were very good in every way, the competition was very strong, and anyone who got into the winnings was very fortunate. The Silver Sebright Bantams were no doubt the best ever shown on the coast, and I doubt if any better were ever shown in the United States. In-so-far as the show generally is concerned, it is safe to say that no larger or better class of birds has ever been shown west of the Mississippi River. I judged the hens and cocks in the Barred Plymouth Rock breeding pens; cockerels and pullets in the White Plymouth Rocks; all the Black Minorcas, rose and single comb; all the White-Faced Black Spanish, which is the largest and best class ever shown on the coast for many years. I also judged the Black Orpington cocks and hens, Jubilee Orpingtons and Silver Sebright Bantams and the Red Pyle Game Bantams. The Polish display is an attractive feature of the show, being represented by a good class of Black and Bearded Golden Polish. The Black Orpington was certainly the finest ever shown on the coast, and we think equal to any ever shown in the United States, if not superior. I think the first prize Black Orpington cockerel is the finest Black Orpington male in the world today.

Judge Browning of Ogden.

The first prize pen of Barred Plymouth Rocks were exceptionally well matched in color, also fine in shape a grand all around pen excepting the male bird, which is a little under size. The second and other pens were fine, and they necessarily had to be, to win in such a large class, as this is probably the largest class in the show. The first prize cockerel was an outstanding winner in his class, and one of the best male Rocks ever shown in the west. The second prize cockerel is also a grand bird both in color and shape, but was slightly under size. The other winning birds are good specimens of the Barred Rock breed. In pullets the first and second were also what might be called a class of their own; they are fine specimens of an up-to-date Plymouth Rock. The owner had over fed and got them too fat, otherwise there was very little to criticise in these two birds. The third and fourth pullets are grand pullets of an

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Produces birds which show their worth as layers and as

Winners of Ribbons

At the Fresno Show this year they won:

Brown Leghorns—1st Cock, 1st Cockerel, 1st and 2nd Hen, 1st and 2nd Pullet. 1st Pen.

Buff Rocks—3rd Cockerel, 4th Hen.

Black Minorcas—1st and 2nd Cock, 2nd and 4th Hen.

Buff Cochin Bantams—1st Hen, 1st Cock.

Blue Andalusians—1st Pen, 1st, 2nd, 3rd and 4th Hen, 1st Cock, 1st and 2nd Cockerel, 1st Pullet.

Bronze Turkeys—4th Hen, 4th Gobbler.

Buff Orpingtons—3rd Cock, 5th Hen, 4th Pullet.

Besides these, El Oro Birds won the Bankers' Cup for the greatest number of points of any one breeder, with 66 points; Special for Best Mediterraneans. Besides that, in another special these birds literally

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up-to-date style. The fifth prize pullet is one of the clearest barred birds of the old style of wide barring that could be found anywhere, but the barring of today is more narrow than what was called for some five years ago.

In White Plymouth Rock Cocks the first prize bird is the finest White Plymouth Rock cock that I ever handled, and was in a class by himself. The other winning cocks were all grand specimens and fully up-to-date, but when considered in every section none of them equal the first prize bird. The hens were all very typical and an exceedingly fine lot.

The White Wyandotte pens were all very fine specimens of the Wyandotte shape, and very little defective color was to be found. They were such a strong class that some pens left out of the winnings would have taken first prize at most shows. There was very little choice between these pens. The cock birds were an exceedingly strong class and at least one noted Chicago winner was unplaced in this class, so hot was the competition. The hens were of the same quality as the cocks, with very little to choose between the winners.

White Crested Black Polish were one of the strongest classes ever exhibited west of this breed, and were very attractive and an excellent lot. They all had exceptionally fine color.

The Buff Orpingtons were one of the strongest classes of the show, and I was surprised to find such fine color. Clear wings seemed to be a common thing with these fowls, and very little black in the tails of the winning birds. The winning pullets and cockerels were all very fine color.

Blue Andalusians. This was rather a weak class.

Golden Sebright Bantams. Some of the most beautiful feathers ever carried by chicks were found among the Golden Silver Sebright Bantams of this show. They were a grand miniature specimen of Sebrights.

S. Tyler, Pasadena.

I have never seen a better display in any show room, quality and quantity considered, the American classes being very strong. Take it all in all the show is very fine, the Bantam class being the largest I have ever seen on the coast and exceptional in quality .

Judge Randall.

Buff Orpingtons were a strong class, particularly the cocks and pullets; hens had some good old campaigners among them, and was as a rule good.

Black Orpingtons were also a strong class, and the winning cockerel was a beauty. His long journey from England did not affect him in the least. The second bird was a little out of condition, and was evidently suffering from too much show. The third was a fine list. Black pullets were very fine, being some of the best that it has ever been my lot to see. Hens were a medium grade, and mostly out of condition. The long confinement being too much for such heavy birds.

White Orpingtons showed a decided improvement on last year's exhibition. The winning cockerel, pullet and hen being particularly fine.

Dorkings were a small class, but good in quality, one pullet being a dream.

Partridge Cochins were good, the winning pen being the best we have ever seen on the coast.

Buff Cochins were weak, and would not be recognized in some parts of the country.

Anconas were a fair class.

Buff Cochins Bantams were a strong class, and competition very keen. The winning cock, hen and pullet were a revelation to western Cochin men. No such color has been seen here before.

Silver Spangled Hamburgs were a small class, but high in quality. The cock was a dandy, as also was the leading pullet.

F. H. Thomas.

The classes I judged were the finest in quality I have ever handled. The Buff Rock was by far the best I have seen since I came West. They were a good even buff color, and well up in size and shape. The Buff Wyandotte class was also good. The first prize cockerel was of a very even color and a typical Wyandotte. As a whole the class was much better than last year. The Partridge and Columbian Wyandotte, although not such a large class as some of the others, showed good. The Single-Comb Buff Leghorn was a large class, consisting of some very choice birds. The Polish classes in the Goldens and the Silvers contained some of the finest birds that could be brought from the best yards in the East, and were a pleasure to handle. Altogether the Polish class is as strong as could be found in most any show in this country, either East or West. The Black Red Game Bantams is a class that is worthy of mention, as the birds were very hard, fine station, and would prove winners not only in the west but in the east. As a whole the Los Angeles County Poultry Association can congratulate themselves, that they have "pulled off" the largest and best show that was ever held on the coast; that the quality of the birds exceeds that of previous years, also that the show was well staged and well managed.

NATIONAL POULTRY ORGANIZATION.

A circular letter is being sent out to the poultry departments of the various State Experiment Stations suggesting the organization of the instructors and investigators in poultry husbandry. As the letter well states, the field of poultry husbandry is a comparatively new one, and much can be gained by those engaged in the work holding an annual meeting to exchange views and experiences. It is suggested that the meetings be held at some event of special interest to poultrymen, like some leading show. Prof. James E. Rice, of Cornell, is the prime mover in the proposed organization.

FLUTE CORN.

An Englishman and his wife sat near me in a cafe on the avenue the day before yesterday. I knew they were English as soon as I saw his coat and her hair. Even if I had been these two unmistakably English things, I should have guessed their nationality from a name they gave to an American dish. The man was ordering luncheon.

"I don't see it on the bill of fare," he said to the waiter, "but bring me some flute corn if you have it."

"Flute corn?" repeated the waiter, in surprise.

"Yes," said the Englishman, "flute corn."

The waiter still hesitated.

"Why," went on the Englishman, don't you have it?" The sort of corn you know, that one eats like playing the flute."

And as a delicate euphemism for corn on the cob I think "flute corn" can hardly be surpassed.

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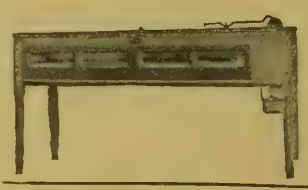

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HENS—First, Second, Third, Fourth, Fifth
PULLETS—First, Second, Third, Fourth, Fifth
PENS—First and Second
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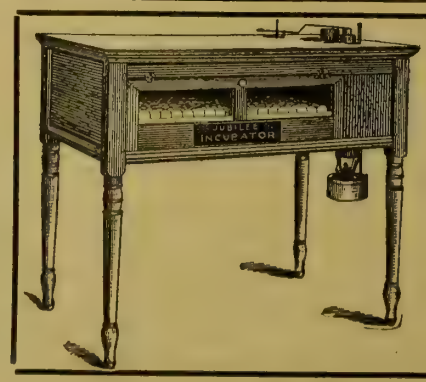

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The Ornamental Garden

By ERNEST BRAUNTON

Rose History

THE ROSE has for all ages been the favorite flower, and as such it has a place in general literature that no other plant can rival. The number of species of roses (not varieties) is differently stated as from thirty to over one hundred, while the number of varieties catalogued by specialists in Europe and this country has long overstepped the thousand mark.

This great number of species and varieties of roses illustrates forcibly the extreme variability of the plants, their adaptability to various conditions and consequently their wide dispersion over the globe, the facility with which they are cultivated and the readiness which new varieties are continually being produced by the art of the hybridizer and the careful selection of seedlings. The species are natives of all parts of the Northern Hemisphere, but are scantily represented in the tropics, except at a considerable elevation.

The original rose was a single, five-petaled flower, and is only represented among the cultivated species by the Japanese Rosa rugosa. Roses have been grown for so many centuries and have been crossed and recrossed so often that it is difficult to refer the cultivated forms to their wild prototypes. It is generally believed that the older roses in cultivation originated from Rosa gallica, a native of central and southern Europe. Rosa centifolia, the cabbage rose of the Caucasus, contributed its share, and a cross between the two may have been the origin of the Bourbon rose.

The monthly or China roses sprang from Rosa indica, and these crossed with the centifolia and gallica types, are the source of the hybrid perpetuals. Tea roses and noisettes also acknowledge Rosa indica as one of the progenitors. The Banksia rose is a Chinese climber. Rosa Damascena is cultivated in some parts of Turkey for the purpose of making attar of roses, The flowers are gathered before sunrise and distilled the same day. The distilled liquid is allowed to remain for a day or two, by which time most of the oil has risen to the surface, from which it is skimmed off. It takes 200,000 roses to yield an ounce of attar, and the quantity sells on the spot for about $1000.

ANGEL CITY NOTES.

An eupatorium, known here specifically as arboreum, is now in full bloom and will so continue until May. The umbels are loose and as much as a foot in diameter. If given room to develop the plant grows to a large size. The stems, of an inch or two in diameter, are as hard as those of any other shrub.

Sweet alyssum is a perennial here, and if kept sheared close soon after the blossoms begin to be on the decline, may be had in bloom every day of the year.

Bigonia venusta, just now coming into flower, is one of our most attractive winter-flowering plants. It is surprising how low a temperature it will endure and do well. This entire family of plants is one of the most valuable we grow in Southern California. B. venusta is followed in early spring by B. sideriafolia, with its larger creamy white flowers in great profusion. This variety is succeeded by B. buccinatoria, with its large bright red blossoms with a yellow throat. At the same time the deciduous varieties are in their glory.

Japan persimmons are so well adapted to California climatic conditions that they will soon be one of our staple products for home consumption. They are too soft for shipment, therefore will not appear in Eastern markets. Wherever they will stand the climate they should be largely planted. Some varieties produce fruit to a pound weight, and that too without a seed.

The beauty of Solanum Rautonnetii must be seen to be appreciated. Shrubby in habit, it is one of the most desirable subjects we grow on this coast. The flowers are of an intense violet blue, with a centre of gold.

Fatsia papyrifera is now in full bloom for the second time this season —an unusual thing for this sub-tropical plant.—P. D. Barnhart.

DIVIDING PERENNIALS

Herbaceous perennials, which have grown for many years undisturbed, can best be dug up, divided and replanted during early fall, provided they have already flowered. While early spring is also an excellent time to perform this work, the plants will not flower as profusely the first season as those planted in autumn. Fall set plants become established before freezing weather, and if given a mulch during the winter, they start into rapid growth early in the following spring, flowering a week or so later than the old-established clumps.

Carefully dig up the plants to be replanted, and with a sharp knife or spade divide them into as many parts as there are crowns or shoots, leaving each with a portion of root. The new beds into which the plants are to be set should be in readiness for their reception before the clumps are divided, so that the plants will not be exposed to the sun or wind to dry out their roots. Perennials remain in the same location for years without being disturbed, and to have them healthy a well-prepared, fertile soil should be provided. Nearly all the species and varieties of herbaceous perennials can be most advantageously planted now, and so those desiring to embellish the home grounds with these plants should purchase and plant at an early date.

The numerous sorts, differing greatly in size, habit of growth and color of flowers, make it possible for one by a judicious selection to have a continuous display of flowers from early spring to late in fall. Herbaceous perennials are rapidly taking the place of bedding plants, because of their cheapness, perpetuity and effective display for a minimum amount of attention.

The newly fledged yatchtsman shouted to an officer of a certain craft:

"Have you weighed anchor?"

"Yes, sir."

"Then,' thundered the new commodore, "why the deuce don't you announce the weight?"

Gladys—Oh! Fred, I've been to see the doctor, and he says I can't play golf.

Fred (a rude unfeeling husband)—Indeed? But you might have saved his fee.

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7. Noiseless in operation.
8. Has no jar or hammer.
9. Perfectly balanced, no braces are required to keep pump in position.
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14. The pitman rods are of the same length and are forged from one solid piece of best machine steel.
15. The driving and counter-shafts have only 22 inches between the bearings which carry the load, and with the size of shaft used makes it impossible to swing out of line, under the heaviest of work.
16. The cross-heads are planed and fitted with tempered brass strips made to fit groves in columns; so arranged that wear can be taken up.
17. Both pump rods are fastened to the cross-head pins, so there is no pulling strain on the cross-head proper.
18. By our specially constructed couplings, rods are as strong at joints as at any other part.
19. The Addison Patent Straight-Waterway Valves offer a free passage for water, causing less friction than in any other valve.
20. Pump can be operated without a stop as the following testimonial proves:

Addison Pump Co.,
Pomona, Cal.

Gentlemen:—

In reply to your inquiry of Dec. 24th., I am glad to say that your pump has now worked steadily for over two years with entire satisfaction.

As far as I can recall it has never had to be repaired, and has never missed a stroke.

Very truly,
J. H. McBRIDE.

Pasadena, Cal., Dec. 28, 1906.

If you will come to Pomona and spend a day with us we will show you our pump and other pumps in operation, then leave it to your own judgment to select the best.

We give an iron clad guarantee with every plant.

IT WILL PAY YOU TO INVESTIGATE THE ADDISON BEFORE PURCHASING A PUMP.

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Is making the very best strains of blood fresh from the Island of Jersey a specialty.
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LINERS

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Advertisements in Liner Column 1½ cents per word. Eight words to a line. No advertisement taken for less than 25 cents.

WASHINGTONIA FILIFERA AND ROBUSTA and Euretia edulis palms, from 5 to 10 feet high, to exchange for other kinds of nursery stock or sold for cash. Give offers. Enough for carload lots. Erickson & Heinz, Brawley, Cal.

FOR SALE—BURBANK'S PHENOMENAL Berry Plants, true to name, in quantities to suit. For terms apply to E. Thompson, Box 630, Fresno, Cal.

FOR SALE—TWO THOUSAND SANTA BARbara Soft Shell Walnuts from 3½ to 8 feet high at 10 to 25 cents each. H. J. Hickson, Route 2, Burbank, Cal.

C. ANDREWS, 332 THIRD STREET, LOS ANgeles. Yards, North Southerland Avenue, Hollywood. Partridge Wyandottes. Winners at Los Angeles.

FOR SALE—WHITE PLYMOUTH ROCK Cockerels, Fishel strain. Some fine ones, $2 and up. P. M. Young, Lawndale, Cal.

WANTED—HIMALAYA BLACKBERRY, McDowd Berry and Longworth Strawberry Plants. Give Price and all particulars. Address Lock Box 64, Gridley, Cal.

BUFF LEGHORN COCKERELS FOR SALE. Also some Black Minorca pullets. Sell to make room. Mrs. H. J. Warrick, Corning, Cal.

COLUMBIAN WYANDOTTES, THE FANCY and Utility Fowl. Eggs and stock for sale. Eggs from Pen No. 1, headed by First Prize Cock at late Los Angeles show, $5 for 13; No. 2, $3. Also Black Tailed Japanese Bantams, $4 per 13. Frank J. Ironmonger, Hollywood, Cal.

FOR SALE—WHITE WYANDOTTES, SILVER Cup Winners at late show. Choice Stock for sale. Eggs, $2 per setting, $10 per 100. Mrs. Mary Van Brunt, Avery and Benefit Sts., Hollywood, Cal.

VICTORY POULTRY RANCH—WON AT LOS Angeles, January, 1907, Thirteen Prizes on Sixteen Entries, also Meserve Silver Cup on Best Pair of Pekin Ducks. Orpingtons, Buff, Black, White; R. I. Reds; Pekin and Buff Orpington Ducks. Sure winners, great layers, rapid growers, top market quality. We guarantee satisfaction. Write us today. Goodacre Bros., Box 45, Compton, Cal.

SEED POTATOES WANTED, EITHER Early Rose or Triumph, by Francis Heinz, Brawley, Cal.

SPARR'S JAPARA COFFEE-YOU AND YOUR friends are offered an opportunity to buy the finest drinking coffee grown, price 25 cents per lb., packed in 5-lb cans, one dozen in case, 60 lbs., freight prepaid. This is about two-thirds of the usual price charged for ordinary coffee. Send $2.80 for 10-lb. can. Liberal sample sent by mail on receipt of 4 cents postage. F. W. Sparr, 114 East Market St., Los Angeles, Cal.

LOVERS OF GOOD COFFEE—YOUR ATTENtion is respectfully called to the above advertisement. If you enjoy a cup of really good coffee you can buy it from me almost as close as you can buy sugar. Make up an order with your neighbor and write to me. I am a direct importer of Tea and Coffee and can save you money. I ship to all parts of the Pacific Coast and guarantee every pound fresh and pure. Established in Los Angeles ten years. F. W. Sparr, 114 E. Market St., Los Angeles.

FOR SALE—THRIFTY YOUNG WALNUT Trees from 5 to 8 feet tall, grown from selected soft shell nuts, $25 per hundred. A. M. Hoel, Goleta, Santa Barbara County, Cal.

FOR SALE—FINE, LARGE, VIGOROUS White Plymouth Rock cockerels, $3, $4, $5 and $10 each. FRANK H. THOMAS, 1820 Hobart Blvd. Los Angeles.

CASH FOR YOUR RANCH.—SEND FULL description. Will sell if price is right. W. A COLWELL. 223 West 2d., Room 101. Los Angeles.

SINGLE-COMB WHITE LEGHORNS, FINE white, large, birds; good layers. Hatching and shipping chicks. Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER, Ontario, Cal.

BERRY PLANTS—HIMALAYA BLACKberry 20c each, $2 per dozen, $12 per 100. Mammoth Blackberry, one-half above prices. February delivery; address—ADELBERT COOLEY, R. D. 2, Laton Cal.

New Muskmelon

The new muskmelon pictured and described on the Cultivator cover of Jan. 3rd is handled exclusively by

JOHNSON & MUSSER SEED CO.

113 N. Main St., Los Angeles, Cal.

Single Comb White Leghorns
Eggs, $1.50 per setting of 15, $6.00 per hundred
High fertility guaranteed.
C. C. HOCKABOUT WATSONVILLE, CAL.

The two men who had entered the car seemed to want to occupy seats together.

"Can't you sit over a little?" they asked, stopping in front of a pale, scholarly man with eye-glasses.

"I do not know," he said, looking at them over his glasses; "but I will move over a little and see."

California Horticulturally

By JOHN ISAAC, Sacramento, California

Proposed Agricultural Legislation

THE LEGISLATURE is once more assembled in biennial session and as usual there will be many measures before it in which the farmer and fruit growers are directly interested. Among these, we understand, the University will have some measures looking to the establishment of other Agricultural schools than the one at Davisville. The princely gift of the late M. Theodore Kearney at Fresno can not be ignored, and the people of that county demand that it be used for a college of agriculture, following this, other sections come in with the claim that they too are entitled to recognition. Whatever notice is taken of the claims of the different sections, it will be necessary for the Legislature to make liberal appropriations both for the Davisville farm and the Kearney bequest, for possessing these properties, it becomes necessary to use them and to this end buildings and equipments are needed. Several measures of interest to the fruit growers are also rumored, among them the most important will be an endeavor to modify the County Commission act so as allow the local inspectors to get a living salary. When the present law was passed $2.50 per day was a fair compensation, but this amount is so absurdly small that it is impossible to get competent men to work for it. Other changes in the Horticultural laws, looking to their increased efficiency are proposed, but inasmuch as the coming legislature is as yet an unknown quantity it is difficult to fortell what will be done for the producers.

THE WHITE FLY.

There is a strong effort making on the part of some orange growers of Tulare county to secure sour orange stock from Florida under the impression that such stock is immune from gum disease. This is not the case, as the sour stock is as susceptible to the disease as is the sweet stock, but even were it true, the danger to be apprehended of introducing the white fly, which is proving such a terrible pest to the orange growers of Florida would more than offset any advantages such stock might offer. The white fly, Aleyrodes Citri, is vastly more elusive and difficult to handle than any of our scale insects, from the fact that in its mature state both sexes have wings and can escape treatment which can be applied to the scale tribe. They are very lively and can fly great distances and hence will spread over a wider area in the same time than scales can. In view of the fact that the purple scale, the worst of our present scale pests, was brought to us on Florida stock, it is well to make the strongest measures to keep out the worse pest of the white fly from the same State.

GROW OUR NURSERY STOCK.

It seems strange that, with all our superior facilities for growing nursery stock, that we, year after year, import such enormous quantities from the East and Europe. The greater part of the peach stock now being planted in this State is brought from Eastern States. The planter pays for his stock and the added cost of handling and freight, and at the same time takes chances of introducing with it one of many destructive diseases which a prevalent in the Eastern peach s tions. We see no reason why all t peach and, in fact, all other sto required here, should not be produc in our own State and produced fro good seed, which would guarant healthy trees when grown. A ve large percentage of the grafting sto used by our nurserymen is import from France and pays for packin ocean and railroad freight half-roun the world, customs duties and othe expenses which must add greatly first cost, and should be enough warrant its profitable production home. What is needed is home-grow stock; grown from hardy parent from good seed immune or resistan to many of our tree diseases, and wit such stock we should have less troubl with diseases in our trees when grow and could handle such diseases mor easily.

TOO MUCH.

Northern California is getting to much rain and the farmers are look ing anxiously for blue sky and goo plowing weather. The precipitatio this season has so far been unusuall heavy and the periods between storm altogether too short to get much wor done in the fields, as a result plowin is very much behind and unless goo weather comes soon it will be lat before seeding is finished.

PRUNES STILL IN FAVOR.

In spite of doleful prediction as t the future of the fruit industry in ou State, there is more orchard planting going on this season than ever before and while peaches take the lead, prunes come close in favor, and thi in spite of the fact that prune grower have had a hard time of it for years past, both in regard to crops and markets. This season, however, prices are encouraging and prune planting has responded to the improvement in the market.

CITRUS TREES IN MARLY SUBSOILS.

(Continued from page 51.)

marly ridges or belts. Among these will doubtless be the Lupins, which are very prevalent in the foothill and plains region of Fresno and Merced. Lupins require about one-half of 1 per cent. of lime, and some will resist as much as 2 per cent.; but marly soils such as those referred to above will certainly not bear any native Lupins. I doubt that even the gray sage will grow on land thus heavily impregnated. That, however, is a question of fact which those living on the spot should readily determine. If any such will send samples of the plants naturally growing on such lands to the Station, they would aid in the settlement of these questions.

IT'S PENNY WISE.

Policy to set out a good tree, costing good money and then let the sun burn the bark or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Manufacturing Company, 2124 Willow St., Los Angeles.

The Horticulture Quarantine Law of California prohibits the introduction of peach trees from any district where the diseases Peach Yellow and Peach Rosette are known to exist.

Queries and Replies

Vineyard Practice.

I have a five acre vineyard of Thompson's Seedless grapes that I would like information on in regard to pruning, as the vines are 10 feet apart and next to a vineyard of Muscats. The idea of long pruning would make it inconvenient to cultivate the same, as the Muscats and staking them up would be expensive. What I would like to know, is if it is necessary to stake up and prune long or whether they would not bear profitable pruned the same as the Muscats.

I would also like to know the formula for preventing curl leaf on peach trees, and the proper time to apply. Would you kindly tell me through your paper, also the amount of seed per acre each of Vetch, burr clover and field peas that is required for cover crops. J. D. H., Bostonia.

Thompson Seedless grapes do better pruned long and tied up to a stake, than they do when pruned short like a Muscat. When tied to a wire trellis they bear still better. Growers in the Sacramento Valley claim that the vines will more than pay for the wire the first year after coming into bearing.

Bordeaux Mixture is the thing to head off curl leaf. Spray with it as soon as you finish pruning. The later in the season before the trees leaf out the better, but in practice, we some times get left on account of the wet weather, and we therefore advise you to spray anytime when you get a chance after pruning.

Sixty pounds of peas and forty pounds of vetch are the amounts per acre to sow for green crop. We cannot say to a certainty how much burr clover to sow, but we would not sow more than twenty pounds. Let some of it go to seed under the trees and you will always have an abundance without sowing it annually.—J. W. M.

Crandalls Blackberry.

Will you please tell me where I can get Crandall's Early Blackberry plants and when to plant them? Subscriber.

Nurserymen advertising in this paper have Crandall's Early blackberries for sale. Plant them now.

Concord Grapes.

Having read your paper for the past 12 years, and been greatly interested in many of its articles,I wish to find out where I can get genuine Concord grape cuttings well rooted. Will you please answer in your next issue, in your column of queries and replies. —Subscriber, Orange.

We have no way of learning where such stock is for sale beyond that available to the enquirer. We presume any of the larger nurserymen keep Concord grapes. We notice them listed in catalogue of the Fancher Creek Nurseries, and presume others have them also.

Melons and Walnuts.

Please give me a detailed description of the Cassaba melon, also the Placentia Perfection Walnut, at your earliest convenience in your valuable paper..—G. S. B. Healdsburg.

The Casaba melon grows to about the size of the large musk melons, that are seen on the markets, is almost white on the ground side, and light green over the balance with shadings to almost white in places. The divisions are like those in the musk melon, but instead of netting, the surface is wrinkled and ridged in small folds that run in the same direction as the divisions. It ripens late and is a fine winter melon.

The Placentia Perfection walnut originated at Placentia near Fullerton, and is a selected seedling of tne regular English walnut. It averages good size, is symmetrical, with a full kernel which is light colored. It is impossible to describe it so that you would know it on sight from other good walnuts. It is considered an improvement on the old nut, and when compared with them, the difference it at once apparent. You must see the nut to know it.—J. W. M.

Bacteria for Legumes.

Please answer in your paper, whether the United States Government, still furnish bacteria germs for fertilizing beans.

We have new land to plant to beans. Is it difficult matter to increase from a small start enough for 150 acres.

Will it pay to graft seedling apricots that have grown but two years in nursery rows. Would it be better to dig them up and use the roots for grafting into?—A Subscriber, Montaivo.

We do not know if the U. S. Government still distributes the bacteria for bean culture, but the seed firms advertise it. The quickest and just as an effective method is to get some soil from a field in which beans grew last year and mix it with the beans by putting a shovel full into the hopper of the seeder when you are planting. Mix it so that all the seed will come in contract with some of the dirt.

It will pay you better to grow new seedlings and bud apricots onto them at the proper time. There is no root system for a peach or apricot, as one grown from a seed. A one year root is the best.—J. W. M.

Luther Burbank's Address.

Please publish the address of Mr. Luther Burbank and oblige.— A subscriber, Fallbrook.

Santa Rosa, Cal. We would not advise, however, that our subscribers write him very promisciously, for he is a very busy man and all correspondence except that of business or of unquestioned mutual interest should be avoided. The lives of such men are often made quite burdensome by thoughtless correspondents.

The Cultivator is in receipt of the 1907 catalogue of the Western Gas Engine Co. This is one of the handsomest catalogues, in a quiet and dignified style, that has ever come to the Cultivator office. It contains 64 pages, illustrating the various types of engines manufactured by this company, three pages of general information about gas engines, and some very valuable tables of general information, such as, "comparative cost of operating on different fuels," "the effect of altitude on the power of gas engines," "table of horse power required to raise water to different heights," "table of friction of water in pipes," and other equally valuable information. The catalogue, like the engine, was produced in Los Angeles, and will be mailed free to inquirers.

Tommy Twaddles—Pa, what is the meaning of 'financially embarrassed?"

Pa Twaddles—"Financially embarrassed, "my son, is a long expression for a short condition.

Jimkins—And how has he come into this good fortune?

Simkins—Invented an inkstand that you can't get the paste brush into.

A Patient Worker With Plants

In the December 6th issue of the Cultivator we spoke of the success which Mr. J. B. Wagner, has secured at his experimental farm on the sunkissed slope at the base of the Sierra Madre, above the City of Pasadena. That article has caused some little inquiry as to Mr. Wagner and his work, so that we may turn for a moment for a look at the man and what he has accomplished.

A born plant lover and almost a lifetime nurseryman with keen observation and ability to see the needs of the horticulturist, he always strived to produce that which will give great pleasure to his fellow beings and at the same time prove a source of profit to the soil tiller.

When Luther Burbanks first made known the wonderful merits of his Crimson Winter Rhubarb, it was received skeptically by many who looked at it as a nurseryman's boast for some old and well known plant under a new name, but Mr. Wagner, true to his instinct of constantly getting something better, promptly sent in a large order which was the first from Southern California. The success which "Crimson" achieved is now a well known story and of course anyone can look at a success and say that was easy, "anyone could have done that." But when Mr Wagner ordered his bunch of roots of the new plants, only a few hundred, no assurance could be given that it would amount to anything in the arid Southland. No other rhubarb had been a success there. Why should this be? Why pay a good long price for a few roots which would bring to a whole community a large increase in wealth if it proved a success and yet if a failure the loss would not be shared a little bit?

But Mr. Wagner did not qestion this but soon was testing on his little ranch the merits of the new plant.—It won.

Mr. Wagner soon saw its success was assured and pushed its propagation to the fullest; not that he proposed to keep its advantages to himself but that it might have widest distribution and extended benefits. This has not always been done for a consideration for there are many instances when plants have been supplied to organizations which will give proper distribution to those who will give proper care to the plant.

Mr. Wagner expects reports as to the manner of growth in the various sections but other than that received no compensation from those free distributions.

In addition to his work of propagating the Crimson Winter and distributing it, Mr. Wagner took time to observe its habits and its limitations, and to wish that its one or two faults might be eliminated,, knowing well the wonderful results accomplished by hybridizing, he began a search for other varieties of rhubarb which possessed desirable traits which might be bred into the Crimson Winter and at the same time return all the desirable features of the Crimson.

A series of patience trying experiments were taken up, mostly failures, some gave a little hope. The least promising did not discourage Mr. Wagner, he isn't that kind, but patiently continued planting, testing, destroying, then beginning all over again. Success finally came and a rhubarb with the merits of the Crimson Winter with greater size and length of stalk, and with less propensity to run to seed-stem was the result.

The name which has been suggested for this plant and which Mr. Wagner has accepted is: "Wagner's Giant Rhubarb" which will, we believe, some day express as much regarding a success in the line as does "Washington Navel," express one of the greatest successes of horticulture.

But is it as yet a complete success? In itself, yes. But one feature of it is yet to be determined. Will its seed bring forth offspring true to its parent or will it "sport" and bring any old kind of rhubarb? Mr. Wagner hopes much, but as yet no plants will be permitted to leave the experiment grounds till this one fact is determined. If disappointment comes, it will be quietly laid on the shelf with a thousand others and a new beginning made. That's Wagner.

Meantime Mr. Wagner is using his experience and knowledge of the rhubarb plant to select the most thrifty grower, and the most promising of the regular Crimson Winter which he is perpetuating and increasing till he has many thousands of plants for sale. Notwithstanding his care in this respect he is holding at no exorbitant price but selling reasonably, considering the care and selection which he gives.

J. B. Wagner, showing a rhubarb plant eleven months old, with a root more than four feet long. Also showing bunch of stems 18, 28 and 34 inches long.

A letter to Mr. Wagner will bring futher information, or better, a call at his home will give more pleasure and a glimpse at a man who thoroughly loves plants and loves to work with them and make them show their highest development by his work.

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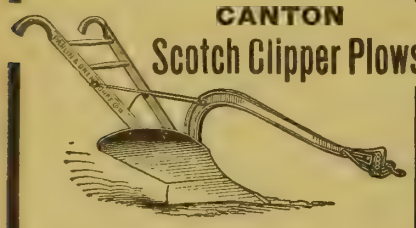

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Good Laying Strains of Fine Colored, Vigorous Stock. Eggs, $1.50 per 15.
Wm. C. Parker, No. 111 Pacific Ave., Santa Cruz, Cal

Single Comb White Leghorns Exclusively
Eggs for Hatching, $1.00 per 13, $5.00 per 100. High Fertility Guaranteed. Phone Park 682.
J. E. Beadle, 901 St. Louis St., Los Angeles, Cal.

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Prize-Winning, Egg-Laying, Wealth-Producing Strain.
M. E. DILLINGHAM, 1187 San Gabriel, Cal.

Household Department

"Little Breeches"

I don't go much on religion,
I never ain't had no show;
But I've got a middlin' tight grip, sir.
On the handful o' things I know.
I don't pan out on the prophets
And free-will and that sort of thing—
But I b'lieve in God and the angels,
Ever since one night last spring.

I come into town with some turnips,
And my little Gabe come along—
No four-year-old in the county
Could beat him for pretty and strong,
Peart and clipped and sassy,
Always ready to swear and fight—
And I'd larnt him to chaw terbacker
Jest to keep his milk teeth white.

The snow come down like a blanket
As I passed by Taggart's store;
I went in for a jug of molasses
And left the team at the door.
They scared at something and started—
I heard one little squall,
And hell-to-split over the prairie
Went team, Little Breeches and all.

Hell-ot-Split over the prairie!
I was almost frozen with fear;
But we rousted up some torches.
And sarched for 'em far and near.
At last we struck hosses and wagon,
Snowed under a soft white mound,
Upsot, dead beat—but of little Gabe
No hide nor hair was found.

And here all hope soured on me.
Of my fellow-criiter's aid—
I jest flopped down on my marrow-bones
Crotch-deep in the snow, and prayed.

By this, the torches was played out
And me and Isrul Parr
Went off for some wood to a sheep-fold
That he said was somewhar thar.

We found it at last, and a little shed
Where they shut up the lambs at night.
We looked in and seen them huddled thar,
So warm and sleepy and white;
And thar sot Little Breeches and chirped,
As peart as ever you see,
"I want a chaw of terbacker,
And that's what's the matter of me."

How did he git thar? Angels.
He could never have walked in that storm;
They jest scooped down and toted him
To whar it was safe and warm.
And I think that saving a little child,
and fotching him to his own,
Is a derned sight better business
Than loafing around the Throne.

JOHN HAY.—

A Social Prank

IT WAS a gay winter in Beverly. The young people of the town had caught the spirit of mirth and as the season progressed gave themselves up to it more and more. The shape it took was social pranks. A rumor was started that Alan White had eloped with Susie Carr. The pair kept under cover for a few days, then appeared at an evening party together, received congratulations, then laughed at their dupes. A ball once set rolling will roll on till it meets some obstruction. No sooner had the mock elopement succeeded in deceiving every one than certain boys and girls decided there must be a mock marriage.

The couple selected for principals were George Towle and Jessie Troxell. Sufficient "spooning" had been noticed between the pair to give color to a wedding. A committee of one was sent to Towle to sound him on the subject and returned with the report that he would not object. Miss Troxell took time to consider the matter, but when it was announced that a goodly number of wedding presents might be expected and the donors would not be likely to take them back after having learned of the "sell" she consented. thereupon the details of the affair were arranged by a self-constituted committee of six—three young men and three girls.

Ned Tracy and Kate Dexter constituted themselves chairman and chairmaness of the committee and assumed full management. There was no opposition to this till it was learned that they were incurring the expenses of a real wedding, but since Tracy and Miss Dexter, who were wealthy offered to pay all bills they were permitted to proceed at their own breakneck pace. This was definitely settled before the bride and groom would consent to such extravagant outlay for a mere prank and for which they might be held accountable.

Recognizing Miss Troxell's sacrifice and to keep her up to compliance with the scale on which the prank was to be played, the committee sent her articles which formed quite a respectable trousseau. This done, they ordered a thousand invitation cards. Miss Troxell's domicle being very small, the wedding was appointed to take place in Harmony Hall, where such social functions were held as comprised too many people to get comfortably in a dwelling. The cards were no sooner out than wedding presents began to pour in. A young minister who had been brought up with the boys and girls interested, was engaged to perform the ceremony. Of course he was in the secret and had declined till notified that at the proper time the bride was to say "No" instead of "Yes." Then the "sell" was to come out, and the festivities were to proceed with a dance.

For weeks even before it was known that there was to be a wedding Mr. Tracy and Miss Dexter were hard at work, Miss Dexter buying the trousseau and Mr. Tracy engaging the hall, ordering flowers—in short, attending to the details. After the cards were out a multitude of matters were thought of that had been overlooked.

The only thing that mighty possibly excite suspicion was the action of the bride and groom. They were never seen together and until after the cards were out would not acknowledge their engagement, but from that time on they kept in their own homes, and Miss Troxell especially would see no one.

When the night of the mock wedding came on, the committee, who, except the couple who were to be mock married and the clergyman, were the only ones in secret, were on a tiptoe of excitement. Mr. Tracy and Miss Dexter figured up the expenses and concluded that the prank should be very successful to be commensurate with the cost. When the hall was filled with guests, Tracy sent carriages for the groom, the bride and the clergyman.

As Miss Troxell entered Miss Dexter was much pleased to hear some one say: "What an exquisite costume! I wonder who designed it." The entrance of the couple was a signal for the guests to arrange themselves in their proper space, leaving one end of the hall for the bridal couple. Tracy was a bit worried because they acted, he said, "as if they were going to get

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DEWBERRY PLANTS
For Sale, 10,000 Mammoth Dewberry Plants, very prolific and a good market variety. Extra early.
Oak View Berry Farm
R. J. Hunter, Prop. Gridley, Cal.

a divorce instead of being married."

The groom approached the clergyman from the left, the bride from the right. The members of the committee pushed forward through the crowd to a white ribbon that had been stretched across the end of the hall in order to catch every word and note the expressions of surprise on the faces of the guests when the bride should bring out the unexpected "No."

The clergyman began the service in the tone usual to the solemn rite of matrimony, and when he came to the words, "Do you take this woman to be your wedded wife?" Towle answered in a sonorous voice, "Yes." "And do you take this man to be your wedded husband?" the clergyman asked of the bride.

The sensation that had been arranged for the guests was experienced by the committee. In a clear, firm voice the bride answered, "Yes."

The secret of how Mr. and Mrs. Towle were furnished with a wedding which they could not possibly have afforded a trosseau and wedding presents that would not have come in a less pretentious affair has been well kept by the committee, especially by the chairman and chairmaness, who paid the bills. The craze for social pranks at Beverly came to a sudden end and has never since been revived.

THE ORANGE'S STORY.

He had been romping happily all the morning, the big dinner had come and as surely gone, uncles and aunts had played with and told stories to him, the memory of the bright Christmas tree danced before his sleep entangled eyes as, hugging a large orange he fell asleep on the rug.

"Little boy," said the orange "I want you to promise me something before you eat me."

"What for?" said the little boy.

"Because I got yellow and sweet on purpose for you to eat," said the orange.

"What shall I promise?" asked the dreamy boy.

"Plant my seeds," said the orange.

"I will if papa will let me," said the little boy. "Where did you grow anyway? Tell me all about it, Mr. Orange and why did you get sweet on purpose for me to eat?

"It's way out in California," said the orange. First I was a pretty white blossom among thousands of others on a big, glossy-leaved tree. We sent out the sweetest scent you can think of to tell the bees we wanted them. They knew, and came by myriads and their busy happy hum among our sweet scented flowers made us all glad. We gave them of our honey and they collected and gave us pollen.

"What's pollen?" said the little boy. "I know honey; it's good."

"Pollen is a dusty little grain, very pretty to look at through a bees eyes, that we flowers need to give our seeds life, and then we orange people make the sweet fruit grow round the seeds; so people may like us and take us to different places and so we get our seeds sown and other trees started. All growing things have some way of sending their seeds away from home; ours is the best way don't you think?"

"'Deed I do," said the little boy. "Its cute of you. Tell me how you lived and how you got here; I like stories."

"Oh, I sat way up in a tree. The first thing I heard was a little girl saying "why papa, there's some wee bits of green oranges.' 'Sure enough, daughter; about the size of your nose, ain't they? The crop's setting fine.' A linnet hopped about among our twigs and branches; once a pretty quail slept all night close to me. I watched the farmer's team pulling the plows past us; watched the sun rise over the mountains and was glad of its warmth; watched the streams of water washing our trees' feet, as they let the streams water us and so grew and grew. Early one morning I heard the farmer say, as he was looking us over to see if we were turning from green to yellow:

'I saw a pesky owl round here last night.' The owl was on our bough, and he crouched low. 'Strange,' he said 'how farmers hate us. As I told you, I was out looking for gophers—gophers that would eat your roots and not care if you all died.' He had been telling us about things outside our orchard. It was he that told us about the bees."

"It's strange," said the little boy, "farmers don't know their friends; I would."

"Soon after this, as I was getting golden, I felt a sharp clip, clip, and I tumbled over into a bag with lots of others, all too roughly we were jolted along the road dumped into some water among a lot of revolving brushes, rolled down all bright and clean along a latticed runway to dry, passed dropping as we went along two moving ropes that got wider apart, so as to size us into companies alike, then got wrapped in paper and tucked into a box, before we really knew what was coming to us. As I was being tucked away I heard the girl say: "I wish I was going where this orange is; it would be fun to have an old fashioned snow Christmas.' 'Give me California, every time,' said the other girl. Then I knew I was going to travel, and I did. So when your papa asked for a dozen oranges in the store where our box was finally opened, I knew I was in for a snow Christmas. I suppose the girl meant your Christmas tree, with all that glittering white stuff."

"That's where you're off," said the little boy. "That ain't snow, but I'll plant your seeds for you all the same."—T. J. ASHBY in Pasadena News.

Household Recipes

Potato Wands and Broomsticks.

Pare eight good sized potatoes and soak them in cold water for two hours, cut in tiny wands and broomsticks, fry in deep fat. Drain on paper, sprinkle with fine salt and serve hot.

Deviled Chestnuts.

Remove a small piece of shell from each chestnut then roast them until tender. Remove the shells and inner skins. Put ont tablespoonful of butter into the blazer of the chafing dish and when hot saute in this a cupful of roasted chestnuts. Sprinkle with salt and paprika. Serve with the cheese and salad course or with game.

Rabbit With Gravy.

Skin the rabbit and wipe it with a towel dipped in boiling water to remove the hair, dry and cut first down the back then cut each half into four pieces. Cover with boiling water and let boil five minutes, season with white pepper and salt, add slice of onion and stir gently till tender. Remove the meat to a hot platter, add a cupful of cream to the stock, rub butter and flour to a smooth paste and stir into the stock, let come to a boil; add a little minced parsley then the meat, heat again and serve.

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For Orchard, Garden or Field it has no equal. A trial will convince you of its merits. Send for my circular of testimonials.

Tom Lewis brought to this office an orange weighing two (2) pounds, grown by W. J. Wilson, a prominent orange grower and vineyardist of Newcastle, Placer County, who has used Tom Lewis' Fertilizer for four seasons and swears by it.—FROM SACRAMENTO EVENING STAR, DECEMBER 23, 1904.

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Four Firsts out of 5; 3 Special Ribbons out of 4 and Silver Cup, the specials being given by the National White Wyandotte Club. Won all prizes on Hens but one and all Pullet prizes were won by my stock, one of my customers winning two Cockerels, 1st and 3rd, Cocks 2nd and 5th, Pens 1st, 4th and 5th. **Mammoth Bronze Turkeys and Buff Cochin Bantams, Silver Laced Wyandottes and Lakenvelders** For Sale Cheap. Address

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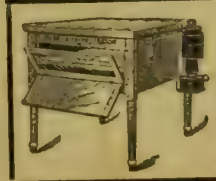

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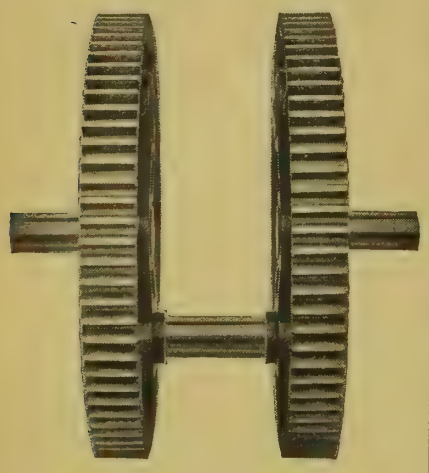

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They do not hammer out your pipe line by irregular pulsations of the water column.

They save power by keeping the water in continuous motion.

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Send for catalog.

Pomona Manufacturing Company

Makers

Pomona, California

The Produce Markets

Los Angeles Markets

Los Angeles, Jan. 16, 1907.

Butter

Local Creamery, 2-lb, sq	.70
Valley Creamery, fancy	.65@67½
Coast, fancy	.62½@65
Cooking	.22@24

Cheese

Cal. Young America, per lb	.18
California Anchor	.17
Cal. 3-lb. hand	.19
Northern	.17
Domestic Swiss	.20
Imported Swiss	.28

Eggs and Poultry

Eggs have taken a tumble of five cents during the past week.

Eggs, fresh ranch, per doz	.33
Northern candled	.30
Fresh Eastern	.28

The following are average prices which dealers pay to producers for live weight:

Hens, per lb	.14
Young Roosters, per lb	.16
Fryers	.16
Broilers, per lb	.18
Old Roosters	.8
Turkeys	.17
Geese	.12
Ducks	.13

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lb	.7.00
Prime Steers	.4
Cows	.3@3½
Calves, per lb	.5
Sheep, ewes, per head	.5.25
Lambs, per head	.6.00
Wethers	.5.00

Potatoes

Salinas	.2.10@2.20
Burbank, Local	.1.90
Highland	.1.85@2.00
Sweets, Yellow, per sack	.3.00

Vegetables

Onions are firmer and some dealers have made an advance in their selling price.

Beets, per doz.	.20@25
Bell Peppers, Green, lb	.3@4
Chili Peppers, Green	.2½@3½
Chili, Dried, per lb	.20
Cauliflower, per doz	.1.25
Cucumbers, per doz.	.1.00
Cucumbers, per box	.75@1.00
Carrots, per doz.	.20
Celery, per doz.	.40
Casaba Melons, per crate	.1.75@2.00
Egg Plant, per lb	.12
Garlic, per lb	.6
Green Corn, local, per sack	.75@1.25
Green Onions, doz. bunches	.25
Lettuce, per crate	.1.00
Lima Beans, per lb,	.6@8
Onions, Aust. Brown, sk	.1.25@1.35
Onions, Y. Danvers	.1.25
Parsnips, per doz	.25@30
Rhubarb, per box	.75
Radishes, per doz	.10@15
String Beans, per lb	.8
Sugar Peas, per lb	.7@8
Summer Squash, per box	.40
Turnips, doz. bunches	.15@25
Tomatoes, per box	.65@75
Wax Beans, per lb.	.10@12

Citrus Fruits

Lemons	.2.00
Valencias	.1.50@2.00
Navels	.3.00
Grapefruit	.3.50
Grapefruit, seedlings	.3.00

Fresh Fruits

Apples, Bellefleur, per box	.1.40
Apples, Ben Davis,	.1.40@1.50
Figs, Black, per lb	.8@9
Figs, White, per lb	.8@9
Pears, Bartlett, per box	.3.50@4.00
Pears, Winter Nelis, per lb	.6@7
Blackberries	.12
Raspberries	.20
Strawberries	.20
Quinces, box	.1.00
Grapes, Muscat	.1.50
Grapes, Blk. Morocco	.2.00
Red Tokay	.2.00@2.25
Grapes, Cornichon	.1.25@1.50

Dried Fruits

Evap. Apples, fancy, per lb	.9½
Apricots	.17
Peaches	.11@12½
Pears	.13
Plums	.11
Prunes, fancy	.7@9

Beans, Dried

Limas, No. 1, per cwt	.5.00
Pink, No. 1	.2.60
Lady Washington	.2.90@3.00
Small White	.3.60@3.75
Black Eyes	.4.50@5.00
Garvanzas	.4.25@4.50

Honey

The figures below are jobbers prices, that is, prices at which the jobbers sell to grocers and others in small lots. The producers can take from this his freight to Los Angeles and one cent per pound for commission and will have left the net price to him.

Extracted, water white, per lb	
60-lb. cans	.7½@8
Extracted, white	.7½
Light Amber	.7
Comb, water white, 1-lb fms	.16
Light Amber	.14
Beeswax	.25

Nuts

Almonds, new, per lb	.19@20
Peanuts, Virginia	.7
Peanuts, California	.6½
Walnuts, No. 1, S. S.	.14@15

Hay

Barley, No1	.14.00@16.00
Barley, No. 2	.12.00@14.00
Alfalfa, Local, per ton	.15.00
Plain Oat Hay, No. 1	.14.00@16.00
Plain Oat Hay No. 2	.800@1300
Wheat No. 1	.14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, No. 1, per cwt	.1.40
Barley (to producer)	.1.00@1.05
Rolled Barley	.1.40
Corn, per cwt	.1.40
Cracked Corn	.1.45
Feed Corn Meal	.1.45
Shorts	.1.45
Bran	.1.20
Oil Cake Meal	.2.50
Cocoanut Meal	.1.50

San Francisco Markets

SAN FRANCISCO, Jan. 15, 1907.

Butter.

California, ex. per lb	.38
California, firsts	.30
California, seconds	.26
Packing stock	.21

Cheese

New California, fancy	.14
Cal. Young American, fancy	.15

Eggs and Poultry

Fresh Ranch Eggs	.48
Eggs, first, per doz	.40
Hens, per doz., small	.5.50@6.00
Hens, large	.6.50@8.50
Young Roosters, large	.600@7.50
Young Roosters, small	.4.50@5.50
Fryers, per doz	.5.50@6.00
Broilers, per doz.	.3.00@4.50
Old Roosters, per doz	.5.00@5.50
Ducks, young	.5.00@7.00
Geese; per pair	.1.50@2.00
Turkeys, per lb	.18@20

Live Stock

Steers, No. 1.	.7½@7¾
No. 1 Cows and Heifers	.5½@6
Hogs, 80 to 130 lbs	.6@6¼
Hogs, 250 to 350 lbs	.6½
Calves, per lb	.4@5
Lambs, yerlings	.5½@6

Potatoes

Oregon Burbank	.1.45@1.75
Salinas Burbanks, ctl	.1.50@2.00
Rivers	.1.25@1.55
Sweet Potatoes, ctl	.2.00@2.50

Vegetables

Asparagus, per box	.125@1.50
Cucumbers, per doz	.1.00@1.25
Chili Peppers, Green	.50@85
Egg plant per box	.3.00@3.50
Green Peas, per lb	.9@12
Summer Squash, large crate	.1.00@1.25
Onions, Red, per sack	.85@90
Onions, Yellow	.75@90
Peppers, Green, Bell	.40@75
Rhubarb, per box	.75@1.00
Summer Squash, large crate	.2.00
String beans	.15@17
Tomatoes	.1.25@2.00
Wax Beans	.15@17

Citrus Fruits

Lemons	.3.50@5.50
Valencias	.300@400
Sweets	.3.25@3.50
Navels	.1,75@3.50
Seedlings	.2.50@3.00
Grapefruit	.2.00@3.50
Limes	.3.50@4.00

Fresh Fruits

Apples, fancy, per box	.1.25@1.50
Apples, common, per box	.75@1.00
Blackberries, per chest	.3.00@4.50
Cantaloupes, large crate	.40@1.00
Grapes, Seedless	.60@90
Grapes, Black	.40@75
Grapes, Muscats, crate	.100@1.25
Grapes, Tokay	.80@1.10
Plums, per box	.75@1.00
Pears,	.1.50@2.00
Prunes, per box	.60@85
Raspberries, per chest	.12.00@14.50
Strawberries, Longworths	.7.00@8.00

Dried Fruits

Apples (evap.)	.7@8
Apricots, per lb	.15@18
Figs, white	.2½@4
Muscatels (loose)	.7@8
Prunes	.2@2½
Peaches	.10@12½
Raisins, seeded (1906)	.8½@10
Thompson, unbleached	.7½
Thompson, bleached	.9@11

Beans and Seeds

Limas, No. 1	.4.25@4.40
Pink	.1.90@2.15
Large White	.2.00@2.25
Small White	.2.80@3.00
Black Eyes	.4.25@4.50
Red Kidneys	.3.40@3.75
Bayo	.2.00@2.30

Hops

1906 Crop (future)	.12½@16

Nuts

Almonds, new	.15@17½
Peanuts, Virginia	.6½
Peanuts, California	.5½@6
Walnuts	.11@15

Honey

Clear White Comb	.16½
Amber	.14@15
Extracted	.5½@7

Hay

Barley, No 1	.12.00
Barley, No 2	.10.00
Alfalfa, local	.9.00@11.00
Oat	.12.00@15.00
Wheat No. 1	.17.00@18.00
Wheat, No. 2	.13.00@16.00

Grain

Wheat No. 1	.1.22@1.24
Barley No. 1	.1.12@1.15
Corn, small yellow	.1.50@1.55
Corn, yellow	.1.27@1.30
Oats. White	.1.45@1.55
Oats, Red	.1.20@142½
Ground Barley, per ton	.24.00@25.00
Bran, per ton	.20.00@22.00
Straw, per bale	.55@70
Feed Corn Meal, per ton	.32.00
Cracked Corn, per ton	.32.00
Oil Cake Meal, per ton	.38.00
Cocoanut Meal, per ton	.25.50
Calalfa Meal, per ton	.21.00
Mealfalfa, per ton	.21.00

Citrus Markets

New York Tuesday Market.

NEW YORK, Jan. 15.—The market is easier and lower on all sizes. Fifteen oranges and one Arizona navel sold here today. Attendance fair. Weather cloudy and raining.

NAVELS—	Avge.
Highland, ex, fy, Highland Ft G. A	$2.50
Cactus, ex ch Highland Ft. G. A	2.30
La Belle, st Mutual O. G. Assn	2.10
Royal Knight, xfy S. B. Fruit Ex	2.95
Ben Hur, ch S. B. Fruit Ex	2.65
Squirrel, xfy A. H. Fruit Ex	2.40
Palm Tree, ch A. H. Fruit Ex	2.35
Victoria, xfy A. H. Fruit Ex	2.70
Lincoln, xch A. H. Fruit Ex	2.45
For-get-me-not T. C. Fruit Ex	2.75
Blue C, fy Covina Fruit Ex	2.85
Blue C, fyCovina Fruit Ex	2.55
Red C, ch Covina Fruit Ex	2.40
Whittier, xch S. T. Fruit Ex	2.60
Blue Label, fy Lindsay Citrus A	2.35
Red Label chLindsay Citrus A	2.20
Moore Estate Moore Estate	2.30
Lily, fy California Citrus U	3.00
Purity, fy E. E. Wilson, Orange	2.45
Lucky, ch E. E. Wilson, Orange	2.10
Country, ch E. E. Wilson, Orange	2.25
Noname Pinkham & McKevitt	2.55
Oak Leaf, ch T. C. Fruit Ex	2.25
Bronco, xfy W A Fruit Co	2.50
Herald, xfy W A Fruit Co	2.20
Maple Leaf	2.45
VALENCIAS—	
Langnum Bonum H District	2.75
La Loma ch H District	2.70

Arizona navels, $3.60; half boxes, $1.75. Oak Leaf brand part withdrawn.

Monday's Markets.

NEW YORK, Jan. 14.—The market is fairly steady on strictly fancy, highly colored stock, but weak and lower on low grade and sizes 80s to 126s. Sizes 150s slightly lower. All grades 176s to 216s are steady. 250s and smaller are lower. Eighteen cars of navels sold today, also one seedling and one lemon. The whole tone of the market is easier. It is raining.

NAVELS.	Average.
Mariposa, fy, Cal. Citrus Union	$2.90
Mariposa, fy Cal. Citrus Union	2.55
Marguerite, xc, Cal. Citrus U	2.60
Mistletoe, ch, Cal. Citrus Union	2.35
olden Flower, G. O. A	2.70
Golden Gate, xc, Red. G. O. A	2.45
Highland, ?	2.95
Bronco, xf, West Am. Fruit Co	2.80
Herald, xc, West Am. Fruit Co	2.80
Deal, o. r., Ed. Peycke & Co	2.45
Sport, ch, Ed. Peycke & Co	2.20
Royal Knight, xf, S. B. Ft Ex	3.05
Trolley, xc, S. B. Fruit Ex	2.55
Forget-me-not, T. C. Fruit Ex	2.80
Gobbler, xc, Stewart Fruit Co	2.60
Signal, xf, Stewart Fruit Co	2.80
Bridal Veil, ?	2.65
Rose, xy, Red. O. G. A	3.00
Clover, xc, Red. O. G. A	2.65
Independent, fy, H. District	2.65
Independent, xf, H. District	2.90
Purity, fy, E. E. Wilson, O	2.45
Mountain Lion, fy, F. H. Speich & Co	2.75
Lucky, ch, E. E. Wilson, Orange	2.25
Heap Good, fy, Pattoe & Lett	2.60
SEEDLINGS.	
For-get-me-not, T. C. Fruit Ex	$2.20
LEMONS.	
Corwin's, fy, W. S. Corwin, Highland	$3.40
Corwin's, ch, W. S. Corwin, Highland	2.90

BOSTON, Jan. 14.—[Exclusive Dispatch.] Market easier. It is snowing. Fifteen cars on track.

For-get-me-not, fy, T. C. Ft. Ex ..$3.05
Pocahontas, fy, T. C. Ft. Ex 2.90
Mt. Whitney, fy, T. C. Ft. Ex 2.60
Full Value, sd, T. C. Ft. Ex 2.55
Millcreek, ch, Crafton O. G. Assn....2.80
Mariposa, fy, CCU Dist No. 18 ....2.95
Mountain Lion, fy, F. H. S & Co. 2.60
Blue Mountain, fy, P & McK 2.55
Hollywreath, fy, CCU Dist No 18...2.50
Tourist, sd, Spence Ft Co 2.40
Climax, fy, Ed. Peycke Co. 2.20
Ruby, fy, CCU Dist No. 12. .....2.30
Condolier, t. 1, CCU Dist No. 3....2.85
Pine Cone, fy, S. B. Ft Ex 2.95
Hiawatha, ch, T. C. Ft Ex ..... ?
Valley, ch, T. C. Ft Ex 2.50
Crafton, fy, Crafton O G A 3.05
Canyon Crest, xf, Red Hgts O Assn 2.90
Signal, xf, Stewart Ft. Co. 2.75
Gondolier, xc, CCU Dist No. 3 .....2.55
Maple Wreath 2.40
Lone Palm 2.50
Climax, xf, Edmund Peycke Co ..2.45
Deal, o. r. Ed. Peycke Co 2.10
Ameythyst, sd, CCU, Dist No. 12 ....2.25
W. & M., xf, ?.....2.90

PITTSBURG, Jan, 14.—[Exclusive Dispatch.] Market firm on good stock. Weather, warm and raining.

NAVELS.

Bear and Eagle, fy, Lindsay C A $2.75
Lochinvar, ch, R H Ft Ex 2.00
Red Shield, xc, A. C. Ft Ex 2.25
Setter, Fair Oaks Ft Co. 2.80
Belt, ch, R. H. Ft Ex 2.35
(Seeds,) Big Find ?.....2.10

LEMONS.

Squirrel, fy, A. H. Ft. Co $2.80
Palm Tree, ch, A. H. Ft. Co 3.05

ST. LOUIS, Jan. 14.—Market weak on large sizes. It is raining. Three cars sold here today. Six on track.

NAVELS.

Lighthouse, sd, CCU Dist., No. 20 $1.15
Goddess of Fruit, xf, S. A. Ft. Ex ..2.75
Hawk, S. A. Ft. Ex 2.40

LEMONS.

Poinsetta, fy, CCU dist. No. 4 .....3.15
Marguerite, xc, CCU Dist. No. 18 ..2.95

CLEVELAND, Jan. 14.—[Exclusive Dispatch.] Weather, cool and stormy. Five cars sold here today.

NAVELS.

Oakleaf, ch, T. C. Ft Ex 2.40
Newsboy, o. r. R. H. Ft Ex 2.40
Partridge, xc CCU Dist No. 18 .....2.10
J. M. Riley 2.25
Ben-Hur, ch, R. H. Ft Ex 2.95
Trolley, R. H. Ft. Ex 1.30
Mistletoe, ch, CCU Dist. No 18 .....1.75

CINCINNATI, Jan, 14.—[Exclusive Dispatch.] Market weak. It is raining. Nothing on track.

NAVELS.

Our Farm, o. r. S. T. Ft Ex $2.10

LEMONS.

Greyhound, ch, S. A. Ft. Ex $3.05
Pet, xc, S. A. Ft Ex 2.90

PHILADELPHIA, Jan. 14.—Exclusive Dispatch.] The market is weaker. It is raining. Ten navels and two lemons sold. Fourteen cars Florida oranges sold here today.

NAVELS.

Blue Label, fy, T. C. Ft Ex. 2.45
Red Label, ch, T. C. Ft Ex 2.35
Red C, t. i., Covina Ft Ex 2.50
Hiawatha, ch, T. C. Ft Ex. 2.50
Canon, sd, S. T. Ft Ex 2.20
Purity, fy, E. E. Wilson 2.70
Mariposa, xf, C C U 2.25
Mariposa, xf, Cal Citrus Union 2.20
Hollywreath, fy, C C U.....2.50
Red and Blue Bbl., xc, T. C. Ft Ex 2.15
Red C, xc, Covina Ft Ex 2.15
Pocahontas etao ietaoi taoi etaoinnshr
Pocahontas, fy, T. C. Ft Ex 2.60
Trial, ch, S. T. Ft Ex 2.35
Extra Choice, T. C. Ft Ex 2.40
Lucky, ch, E. E. Wilson 2.35
Mistletoe, xc, Cal. Citrus Union 2.10
Hollywreath, fy, C C U 2.10
Hollywreath, fy, C C U 1.65

LEMONS.

Pet, xf S. A. Ex San Dimas 3.70
Greyhound, xc, S. A. Ex., ... 3.20
Rossmoyne, ch, C C U 2.85
Rossmoyne, ch, C C U 2.65

CITRUS FRUIT SHIPMENTS.

LOS ANGELES, Jan. 14.—Orange, 57; lemons, 4. Total to date this season, 2490 cars, of which 465 cars are lemons. Total to same date last season, 4664 cars, of which 645 were lemons.

Dry Farming Congress

For the first time in the history of America a general movement has been inaugurated looking toward the rapid development and settlement of the dry land sections of the west. Acting on the suggestion of many of Colorado's business men Gov. McDonald of this state has called the "Trans-Missouri Dry Farming Congress" to meet in Denver on the 24th and 25th of this month. The call has been sent to every state west of the Missouri river and assurances have already been received that delegates will come with state sanction, from practically all of the sixteen common-wealths included in the call.

The importance of this movement cannot be over estimated. Nine acres of farm land out of every ten in the whole country west of the ninety-eighth meridian can never be irrigated, and because of slight rainfall, most of this great territory must look for its redemption entirely to some method of scientific agriculture. Within the last decade the spread of the so-called Campbell system, more commonly known as "dry farming" has convinced the thinking man of the country that in some such method as this lies the agricultural salvation of the west, and it is now proposed to start a broad unprejudiced movement in which every state affected shall take part, to further develop these soil culture systems and bring them to the attention of the world at large.

It is necessary, also so it is said by those who are interested, that some steps be taken to educate the farmers who are today coming into the dry land of the west. In Colorado alone 75,000 new homeseekers have settled themselves within a year. Twelve hundred homesteads in Kit Carson County, Colorado, were taken up in 1906 and this record was almost if not quite, equalled by other counties in other western states. Of these great bodies of settlers, the larger proportion are from the eastern states, and are entirely unfamiliar with western conditions.

The purpose of this Congress which will meet in Denver this month is, first of all to form a permanent, educational, interstate organization somewhat on the line of the National Irrigation Congress, and second, to afford a full and free discussion of the principles of scientific soil culture, and of their development in the west. Speakers will be present from every state west of the Missouri river. The United States Deparment of Agriculture will be represented, it is hoped, by Secretary Wilson. Every agricultural college in the west will have its man in attendance. Mead of Washington Campbell of Nebraska, Olin of Colorado, Jardine of Utah, and a score of others of the brightest agricultural minds in the country are on the program, and few things that refer to dry farming will remain unsaid.

In order to prevent the gathering of a large and unwieldly voting body, Governor McDonald has limited the number of official delegates who may attend. Los Angeles County, however is entitled to ten delegates. Copies of the official call and an urgent invitation to appoint delegates at once, have been sent to the County Commissioners, and it is expected that they will act in the matter within the next few days.

In spite of the voting limit however, it is desired that every farmer and business man in Los Angeles County who is interested in dry farming and can get away from home should attend, regardless of whether or not he is an official delegate from the county. Convention headquarters have been opened at Room 5, Albany Hotel, Denver, where all visitors to the city will be made welcome and full information given.

BEMIS BARRED AND WHITE PLYMOUTH ROCKS

PRIZES WON At Alameda County Poultry Association Show, Oakland:

21 Regular Prizes.
4 out of the 5 Specials given by the American White Plymouth Rock Club.
Silver Cup for the ***best collection*** in American Class.
Silver Cup for ***best display*** in American Class.
Hines Silver Cup for 10 Best White Plymouth Rocks in Show.

I am able to ***furnish*** the ***best*** birds and eggs at moderate prices. I cannot furnish large lots for incubators.

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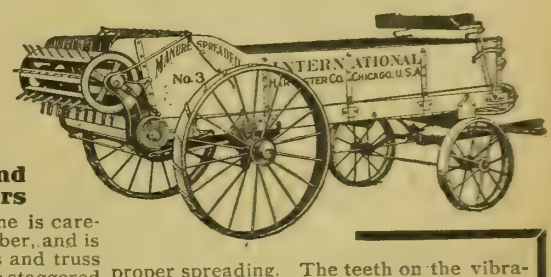
Chicks Just Hatched **We ship them everywhere. Pure Bred White Leghorn Chicks from the Best Egg Producers in the United States**

CALIFORNIA INCUBATOR CO., MAXWELL, MAY 27, 1906.
Gentlemen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come so far and being so long on the way without the loss of a single one, but it is an undisputed fact that such was the case. We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. CAMPBELL.

CALIFORNIA INCUBATOR CO., 907 Washington St., Petaluma, Cal.

A Common-Sense Talk On
Manure Spreaders



I. H. C. Corn King and Cloverleaf Spreaders

THERE'S no doubt that the right kind of manure spreader is a good thing for you to have. It is probably true that there is no other farm machine that, if rightly chosen, is as valuable to the farmer. If manure is spread properly and at the right time, its money value far exceeds what you're apt to think.

But when you buy a manure spreader have a care. There are many of them on the market, and many with various "special features"—fancy affairs that do them more harm than good.

When you buy a spreader look out for these things—and avoid them. What is chiefly to be desired is *strength* and *simplicity of construction.*

Strength is essential because a manure spreader has to carry a heavy load and the rear end—the *machine* end—has hard work to do.

Simplicity of construction lessens the chance of the machine getting out of order and gives *light draft.* You know there are a good many manure spreaders that don't get out of the shed after the first year. They are too troublesome; causing much delay.

are strong and simple. The frame is carefully-selected, well-seasoned lumber, and is strengthened by heavy cross sills and truss rods. They have steel wheels with staggered spokes, and both hind wheels have clutches. The box is made of selected stock and is securely fastened to the frame by heavy steel cleats. Corners are re-enforced with steel plates. Everything is of the very best.

Both of the rear wheels are drivers, and insure plenty of power. A large sprocket with heavy chain drive transmits the power to the cylinder The cylinder is large and strong, and the square teeth (extra long) are made of the best high carbon steel.

The power for driving the apron is applied on both sides, giving an even movement and making binding impossible. The rollers are attached to the under side of the slats instead of to the frame.

The vibrating rake is a most important feature, and is found only on Corn King and Cloverleaf spreaders. It levels the load and brings the manure squarely up to the cylinder —a thing which is absolutely essential to proper spreading. The teeth on the vibrating rake are held in place by coiled steel springs so they never break but adjust themselves to the size of the load.

And as a result of simple construction, the operation is simple. Any one who can drive a wagon can operate an I. H. C. spreader, for one lever does it all. There are ten feeds, ranging from ten to thirty loads per acre. The apron stops of its own accord when the load is all fed out. By reversing the lever it returns and again stops when back in position. No need to watch it at all.

These are some of the reasons why you should investigate I. H. C. Corn King and Cloverleaf spreaders before you buy. There are many other good points about them that are explained in our catalogues. There are two kinds—Cloverleaf, an Endless Apron machine, and Corn King, a Return Apron machine; each made in three sizes.

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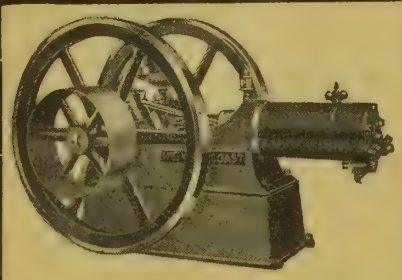

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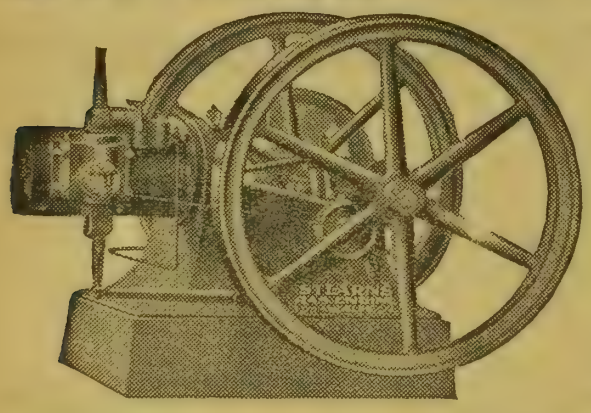

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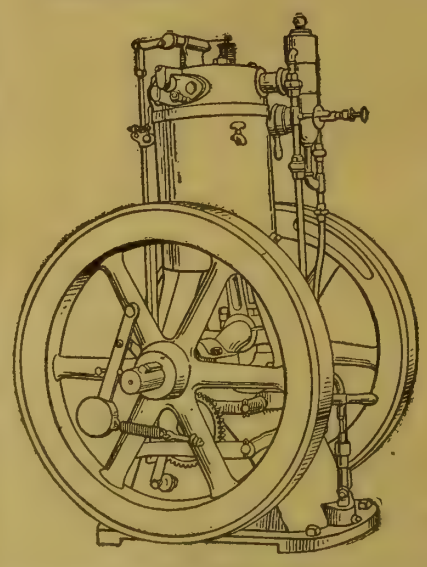

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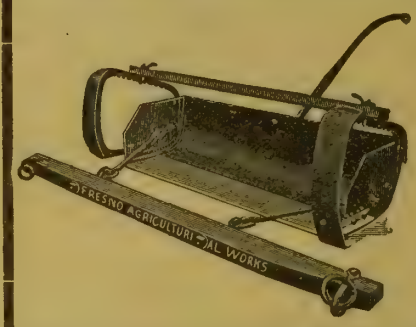

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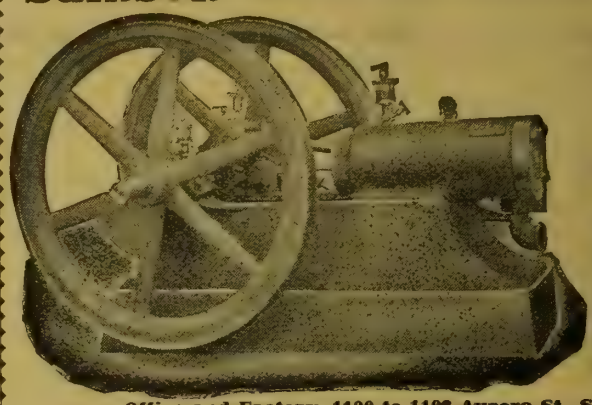

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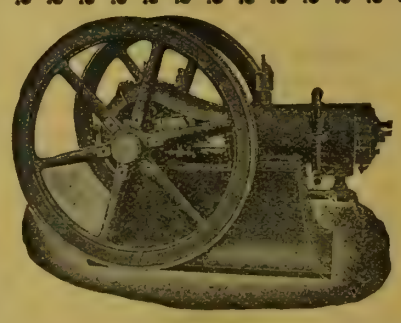

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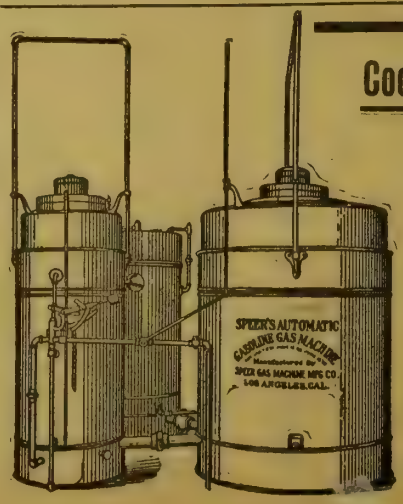

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California Cultivator

Los Angeles January 24 1907 San Francisco

The Smyrna Fig of Commerce

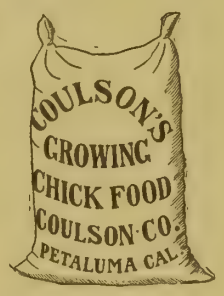
The Introduction of This Fig to California Orchards Will Rank as One of the Greatest Horticultural Achievements in the History of Our State

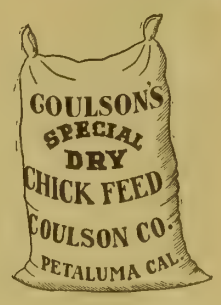
Packing Calimyrna Figs at Fresno

No one thing of recent years is fraught with so much that is full of promise and future greatness to Californa horticultural wealth as the successful introduction of the genuine Smyrna Fig of commerce, together with the Fig Wasp. The introduction of the Washington Navel orange was certainly an event of prime importance, which has added millions to the wealth of the State, but the culture of the orange is, after all, more or less confined to the thermal regions of that State, where biting frosts are unknown, and the thermometer never goes below 22 degrees, and that only for brief periods, for a prolonged cold spell at even 26 degrees, is quite apt to cause serious damage to the crop.

With the fig, however, the area adapted to its culture is much wider. It can withstand 18 degrees and not suffer. Hence its geagraphical distribution is much wider, and as applied to the Pacific Coast, embraces nearly all portions of this State, the sheltered sections of Arizona and New Mexico and Southwestern Texas. As it influences local horticultural development, the Smyrna Fig industry is an epoch-making event, destined to add materially to our rural wealth, and afford a livelihood and employment in all of its ramifications to a large portion of our population.

The introduction of the Capri Fig, which serves as the home of the Fig Wasp, which fructifies the Smyrna Fig, renders commercial fig culture feasible; the tree has a wide range of soils and climates in which it will flourish; it is of easy culture and exceptionally free from injurious insects and diseases; requires but little pruning; is a regular bearer of annual crops which are practically exempt from in jury by frost, because the fruit does not set until early summer; the expense of harvesting a crop is purely nominal, as the fruit drops when ripe, thus only gathering is necessary; drying is simplicity itself, requiring less labor than peaches or apricots; in its dried state the fruit is not perishable, like green fruit, hence, can be held at the convenience of the grower; and, finally, the demand is much in excess of the domestic supply, thus insuring a market for years to come for homegrown Smyrna Figs at profitable prices.





Coulson's Growing Chick Food

Is a mash feed for the growing chicks, designed for feeding when you leave off feeding Coulson's Special Dry Chick Food, composed of articles, each the best in its class, combined in the correct proportion to form

A PERFECT BALANCED RATION

It contains blood meal, meat meal, bone meal, and other articles rich in protein, and the other elements, and is the feed you need to make your chicks excel in size and weight and enable them to become strong, vigorous and heavy-laying fowls.

COULSON'S GROWING CHICK FOOD WINS OUT

San Marcos, Cal, July, 23, 1906.
Gentlemen:

I tried COULSON'S GROWING CHICK FOOD exclusively my first year in business on Brown Leghorns. I sold the cockerels as broilers at nine weeks, averaging 2 pounds, 3 oz. each.

I tried my own mixture of feed the next year and took the same care of the chicks, and sold 75 cockerels as broilers, weighing 105 pounds, making an average of about 1 1-4 pounds each.

Having tested at my own expense the two methods I have concluded that COULSON'S FOOD is superior.

(Signed) J. B. HOOVER.

Coulson's Special Dry Chick Food

Is acknowledged by all The Best and most Reliable Feed for Baby Chicks.

COSTS LESS THAN 2 CTS. FOR FIRST FOUR WEEKS

ONLY HIGHEST QUALITY GRAINS, ETC,, USED

Special Dry Chick Food contains numerous different seeds adapted to needs of the little chicks, besides meal, charcoal, bone and many other necessary articles, each in Granulated form making

A PERFECT BALANCED RATION

CANNOT PRAISE IT ENOUGH

"I cannot say enough in writing in praise of your Special Chick Food. It is just fine. I never saw chicks do so well before."

J. S. SCOTT, Madison.

PULLETS LAY EARLY

"I have fed your Special Chick Food and Growing Chick Food to all my stock with one exception. I tried one lot of 350, and fed them my way of raising chicks back East. Results just fair. The other were fed up to three months on your Special Chick Feed, and the results were a surprise to me. The birds were large and the cockerels out of one lot I sold to the California Market and got a big price, with the request to send on to them at any time I had more cockerels of the same quality."

Respectfully, A. P. WARD,
Calistoga.

USE COULSON'S AND BE SATISFIED

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Where Coulson's Special Dry Chick Food cannot be obtained from local dealers, we will ship, freight prepaid to any railroad station in California, 100-lb. sack for $4.00, or 200 lbs. for $7.50, cash with the order.

Coulson Poultry and Stock Food Company

Petaluma, California

HUMPHREY'S

ENTIRE FLOCK OF

Famous Prize Winning White Plymouth Rocks

HAS BEEN

Sold to Arthur J. Little

In this flock are the following prize-winners at the late Los Angeles show, the largest show ever held west of Chicago—2036 entries—2nd, 4th & 5th Cocks; 1st, 2nd 4th & 5th Hens; 2nd, 3rd & 5th Cockerels; 2nd, 3rd, 4th & 5th Pullets; 1st, 3rd & 5th Pens; special for 10 best pullets in show.

This in connection with my present large flock is conceded by breeders and judges as the

Best Flock of White Plymouth Rocks

west of the Rocky mountains if not in the United States.

I am offering for immediate sale the following—

125 Extra Choice Cocks and Cockerels

AND

400 Hens and Pullets 400

Will sell singles, pairs, trios, or pens; will have birds mated for best results by expert breeders and judges of White Plymouth Rocks.

Eggs for Hatching

From birds that won as follows, at the 1907 Los Angeles show: 2nd, 3rd, 4th & 5th Cocks; 1st, 2nd, 3rd, 4th & 5th Hens; 1st, 2nd, 3rd 4th & 5th Cockerel; 2nd, 3rd, 4th & 5th Pullet; 1st, 2nd, 3rd, 4th & 5th Pens. Special for best 10 Pullets in show, all varieties competing.

23 Out of a Possible 25 Prizes

Never in history have so many prize-winners been owned by breeder.

$2.50 for 15, $10.00 per 100

From special matings containing my very best prize-winners $10 per 15. Correspondence carefully answered. Visitors welcome.

Arthur J. Little
Monrovia, Cal.

Get off at Mayflower, walk north two blocks, thence West two blocks to ranch

California Cultivator

Vol. XXVIII—No. 4 Los Angeles, California, Thursday January 24 1907 Subscription $1 a Year

Southern California Ground Waters

Important Publications on the Available Supply of Water for Irrigation in Southern California, by the United States Geological Survey

THE RESULTS of an extremely practical and purposeful investigation of the ground water resources of the coastal plain region of southern California have recently been published by the United States Geological Survey. These reports cover the region along the coast from Santa Monica to Aliso Creek, and extend inland over the coastal plain to the foothills from San Pasqual on the northwest, through Santa Anita, Glendora, Pomona, and San Bernardino, to San Jacinto on the southeast.

Throughout this whole area the people are dependent mainly upon ground water for their water supply, and much of the prosperity that has been realized in this country has resulted from irrigation by ground waters. Therefore the future is largely dependent upon the availability of these waters and their permanence.

The reports mentioned deal with these questions in a practical way and show where ground waters may be obtained, the depth at which they occur, and what may ultimately be expected if the present improvident use of the water is continued. In order that the reports may be distributed in the most helpful manner the region has been divided into the western, central, and eastern sections, and each has been treated in a separate bulletin.

The western section includes the Redondo and southern half of the Santa Monica quadrangles. This region may be geographically defined as that part of the country lying westward from a line running north from San Pedro Bay through Los Angeles and Glendale to La Cresenta. The central section includes the Downey and Las Bolas quadrangles, and may be geographically defined as land lying eastward from the line above located to a north and south boundary defined by Westminister, Whittier, and Monrovia. While the central section includes the area lying to the east of this as far as San Bernardino and San Jacinto.

Completed tables giving the facts concerning the wells throughout this region are included in the reports,. They show the yield of each well, the capacity, and depth at which water occurs, as well as the cost of operation.

With reference to the supply of the entire region the report states that in all of the important basins there has been during the last ten years a general reduction in the yield of the artesian wells. The last ten years have constituted a period of low rainfall, and as a result the ground water supply has been diminished, and it is evident that there should be no further increase of the drafts upon the under-ground resources. The rate of this decrease even under the influence of the great development that has taken place has been very slow, and while it is probable that in some basins some of the favorably located wells will never cease to flow, the shrinkage must continue in other places unless there is a concerted effort upon the part of the irrigators to be economical in the use of water.

The summary given by the author of these reports, Mr. Walter C. Mendenhall, is as follows:

The supply is large, since it consists of the water saturating all that part of the coastal plain gravels within about 250 feet from the surface over an area of 600 or 700 square miles.

The annual additions to the supply are large, consisting of a part of the flood waters of the San Gabriel, Los Angeles, and Santa Ana Rivers, together with the return waters from irrigation and the local rainfall. The drafts upon this supply are also large and seem certainly to be in excess of the supply in certain parts of the region.

With present developments the water plane must be expected to decline slowly and the artesian to shrink until drainage is checked by this shrinkage to a point where it no longer exceeds the supply. This decline should not prove serious if present developments are not increased, but so long as this development continues at a rate which increases the output, the shrinkage will also continue.

The lowering of the ground water level and shrinkage of artesian areas will no doubt be interrupted by periods of rising water levels.

The shrinkage of an artesian belt will be manifest along its northern edge, and the effect farther south will be rather a decrease of flow and a lessening of pressure.

Shallow artesian wells will generally be affected earlier and to a more marked extent than the deeper ones.

One of the maps included in this series of reports shows the artesian areas and the shrinkage which has already occurred. For example, the great artesian area running along the coast from a point west of Los Angeles to a point south of Santa Ana already shows a shrinkage along its northern and eastern borders equal to about one-fourth of the original area, while that south of Pomona shows a shrinkage of approximately 10 per cent. The San Bernardino area has likewise been reduced about one-half, and that north of San Jacinto shows a shrinkage along its northern border equal to about one-fifth of the original artesian area.

These reports should be consulted by every irrigator along the coastal plain. They give most potent warnings concerning the loss of water supply which, it appears, may be avoided if intelligent measures are adopted. Inasmuch as this garden spot of North America has been developed solely as a result of irrigation by ground waters, it appears that the inhabitants of the region can do no better than to organize and adopt such measures as are recommended in these reports.

Lake Hemet—Supplies Hemet, San Jacinto and Vicinity

Tom Lewis' Fertilizer The Best and Cheapest

For Orchard, Garden or Field it has no equal. A trial will convince you of its merits. Send for my circular of testimonials.

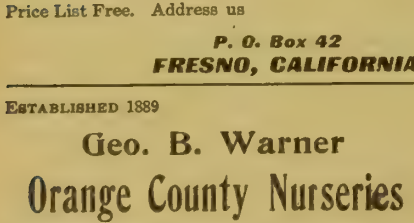
Tom Lewis brought to this office an orange weighing two (2) pounds, grown by W. J. Wilson, a prominent orange grower and vineyardist of Newcastle, Placer County, who has used Tom Lewis' Fertilizer for four seasons and swears by it.—FROM SACRAMENTO EVENING STAR, DECEMBER 23, 1904.

Office and Works, 1916 and 1918 10th St., Sacramento, Cal.

WALNUT TREES grown from carefully selected seed

I have a fine lot of trees. Call and see them. Postal gets price list. **A. A. MILLS, Anaheim, Cal.**

NEWBERT'S PHENOMENAL BERRIES



The most up-to-date berry on the market. They will clear you more money to the acre than any other berry you can grow. $750 clear profit has been made from one acre of these berries. The market price has been from 75c to $1.50 per crate of 16 half-pound baskets. I have taken ripe berries from my vines by the first of May.

Young Plants—I have for sale this year plants that I will guarantee will grow you large and healthy vines. **Prices**—I can furnish large orders on short notice. Price per dozen $1.00, per hundred $7.50.

My plants are rooted from the tips, and will make you a strong and fast-growing vine. Order at once to ensure delivery.

F. M. NEWBERT'S
Poultry and Berry Farm
Palmetto Av., Sacramento, Cal.

To get actual size of the "Phenomenal" measure 2 inches lengthwise and 1 inch in width, then draw a circle around the points.

Cause and Effect

IF YOUR DEALER DOES NOT CARRY
"MOCOCO"
FERTILIZERS.
order direct.
Pamphlet and Price-List free.
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Accept no substitute; insist on having "MOCOCO"

THE FRESNO NURSERY CO.

INC. CAPITAL PAID UP, $50,000.00

Can Fill Your Orders for

GRAPE VINES GRAPE CUTTINGS
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FRUIT TREES OF ALL SORTS

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Orange County Nurseries

Grower and Dealer in Citrus and Deciduous Trees of All the Standard Varieties

Grafted Walnut Trees a Specialty. Budded Loquats, Roses, Grape Vines, Berry Plants, Cypress, Etc. Street and Ornamental Trees, Shrubbery, Blue Gums. Only clean, healthy stock offered

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Walnut Trees Stocky, healthy Seedlings 6 to 12 ft. high. Selected seed from grafted orchard. Best variety on the market.
G. W. Sherwood, Fullerton, Cal.

THE "BOSS"
TREE PROTECTOR
Made of Yucca Palm

Is cheap, durable and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn, grasshoppers or dry winds. Can be easily removed; will last for years.

Send for samples.

PRICES

12 inch long,	$ 9.00	per 1000
14 inch long,	10.00	per 1000
16 inch long,	11.50	per 1000
18 inch long,	12.50	per 1000
24 inch long,	15.00	per 1000
30 inch long,	17.00	per 1000

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P O. Box 161 Fresno, Cal.
Commercial Smyrna Fig a Specialty

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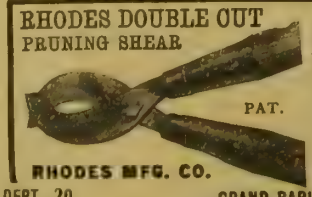

Cuts from both sides of limb and does not bruise the bark. We pay Express charges on all orders. Write for circular and prices.

DEPT. 20 GRAND RAPIDS, MICH.

Deciduous Fruit Culture

By J. W. MILLS

ORCHARD FERTILIZERS.

THIS subject was handled by Mr. Utter, Conductor of Farmers' Institutes of Wisconsin, giving the principles taught in that State in regard to purchasing and use of fertilizers. He declared that it was a waste of money to pay freight on certain mixed fertilizers when the same elements can be brought here in a much more condensed form. He advised using the simples, that is sulphate and chlorate of potash, superphosphates in their most condensed form either singly or together as needed an extra feed at times when it was not possible for the liberation of nitrates in the soil to take place. It is known that this takes place only when the temperature is high and trees need a good supply of it when they are sending out the new spring growth and setting the fruit. Mr. Utter emphasized the fact that what we got in our complete fertilizers over and above the actual elements of combination of potash, phosphoric acid and nitrogen, must necessarily be filler, which is of little use and on which we must pay that much useless freight. It sounded good to hear a visitor say these things for the State Agricultural Department has been telling these things for years and in many cases has been unheeded.

He touched upon the need of maintaining the maximum amount of humus in the soil, giving its office and explained how it affected the soil. He told the audience that if a small piece of earth were placed beneath the microscope and the spaces between the articles were filled with small particles of fiber, it was humus that we saw and this prevented the evaporation of moisture which explains why soils rich in humus require less irrigation than do soils poor in humus.

It is commonly supposed that the climate of the Eastern States is better adapted to the growth of green manuring crops than is the climate of California. The speaker said that we had the advantage because we could grow them during the winter and also part of the summer time. In the North and Middle States, it is impossible to grow such crops during the winter months, and when growing time comes, the staple crops must be planted and the latter part of the summer is all that is left in which to grow a green-manuring crop. This is not long enough to get much growth and after some crops no fertilizer crops can be grown at all. In such cases crop rotation is the only alternative.

Another point in favor of California climate, is the utilization of the rainfall. The soil here is never frozen so that it will shed the water and as a consequence, the greater part of it is soaked into the soil. In certain parts of the East, the ground is frozen all winter and the rain and melted snows runs off and very little of it goes into the soil where it will do the most good. This interesting talk brought out the fact that everywhere scientific farming is underlaid by the same general principles, and if a man is clear-headed enough to make the proper application of them, there is no reason why he cannot succeed in the end.

PRUNING PEACH TREES.

Experiments conducted by the Missouri station to determine the best method of pruning peach trees have yielded results which may be summarized as follows:

Under normal conditions, when peach trees have passed the winter safely and promise to produce a crop of fruit, they should be pruned each winter by cutting back the main limbs, so as to leave one-half to two-thirds of the new growth which contains the fruit buds.

When the fruit buds have been winter-killed the opportunity may be seized to cut back the main limbs more severly, thus securing more compact trees, and avoiding the formation of long, straggling limbs which the trees have a tendency to form if they are not cut back.

The amount of cutting back depends upon the extent to which the trees have been injured.

If only the fruit buds have been killed, and the wood of the tree is uninjured, trees of compact form, if they have been annually pruned, should have their main limbs shortened so as to leave only a few inches of the new wood. If, however, the limbs are getting long and straggling they may be cut back into two or even three year old wood. Before severe cutting is done the grower should be certain that there are enough live buds left to produce fruit. The peach sets such an abundant quantity of fruit buds that if a small percentage of them have escaped injury there may still be enough to produce a paying crop of fruit.

When the winter is so severe that not only the fruit buds are killed but the wood of the tree is badly discolored the trees may be invigorated by cutting them back quite severely. The following is a summary of results of pruning peach trees during the severe freeze of 1898-9:

Peach trees which were not pruned, or in which only a part of the new wood was removed after the severe freeze of 1898-9 started into growth first in spring and for two weeks after growth began they appeared to be in more vigorous condition than did pruned trees.

This apparent vigor of trees that were not severly pruned was only temporary, however. Some of them died a little later and none of them made satisfactory growth throughout the season. They seemed to have used up all their energy in making a new start. At the close of the season they had made but little new growth and this was confined mainly to the tops of the branches, and the old limbs and trunks containing only dead twigs. Their annual layer of new wood was very thin and some of their roots died.

Trees of bearing age that were cut back so as to leave only the trunk and bases of the main limbs died in some cases and where they did live their growth was unsatisfactory, many of the sprouts starting from the unreliable seedling stock below ground.

Trees of bearing age which were cut back into two years old wood in the case of young trees, and to three or four year old wood in older trees, thus leaving stubs of the main limbs from three to four feet long made the best growth. They made from six to nine feet of new growth and entirely renewed their heads during the following season. They also developed a good layer of new wood on their trunks and formed a good crop of fruit buds.

In the case of two year old trees, those that were cut back so as to leave the trunk and spurs of the main branches two or three inches long did best and made fine heads.

One year old trees that were cut back nearly to the original bud and had a single sprout trained up during the growing season made fine trees.

The principal growth took place near the extremities of the parts of the tree that were left after pruning. Trees that were cut back into more than four year old wood failed to grow at all in some cases, showing that in very old wood the buds are too dormant to be easily started into growth. The amount to cut away in renewing winter injured trees requires good judgment in choosing between leaving too much wood (which results in weak growth and too high heads) and cutting back too far into old, dormant wood that will not start new limbs.

Experiments to determine the best time to prune showed that trees that were pruned any time after the severe cold spell up to the time the buds began to start in spring grew equally well.

Good cultivation is of more than usual benefit to peach trees during the spring and summer following severe winter injury.

"That Miss Wadleigh is rather reserved, isn't she?"

"Very much so. I reserved her for life last night."

Jack—So the pretty girls are going to sell kisses at the church fair to help among the proceeds, eh? What will the kisses be worth?

Katharine—Oh, I guess they'll be sold at their face value.

Make Money

Growing Eucalyptus Trees. We can supply the following varieties in quantity:

E. Globulus
E. Rostrata
E. Rudis
E. Corynocalyx
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Our New Illustrated and Descriptive Catalog for 1907 sent to any address for a two-cent stamp.

Armstrong Nurseries
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Berry Plants

Gardena Dewberry -	$8.00
Brandywine - -	2.00
Aroma B - - -	3.00
Senator Dunlap - -	3.00
Klondyke - - -	3.00
(Improved) Lady Thompson	2.50

All plants fresh from the east last spring, and were raised on virgin soil. Write for prices on 100,000 lots.

A. E. HARRINGTON
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Strawberry PLANTS

Headquarters For The
Burbank Beauty

A real beauty and the earliest and most vigorous of all strawberries. A good table berry and will ship further than any other berry. $3.00 per thousand.

Brandywines—The old standard variety of the southwest. Can fill orders by the thousand, hundred thousand or million. $2.00 per thousand. Plants carefully packed and we guarantee their arrival in good condition.

FAIRVIEW FARM NURSERY
G. H. HOPKINS, Prop BURBANK, CAL.

Trees

Early Crawford, Hale's Early and many other varieties of Peach trees; all fine budded stock.

Large stock of all the leading varieties of Apples, grafted on whole roots and free from all pests. Also a fine stock of Cherries, Pears, Burbank and S.B.S.S. Walnuts, etc. Send for price list.

A. F. Scheidecker, Sebastopol, Cal.
Prop. Pleasant View Nursery.

Strawberry Plants

150,000 Brandywines
200,000 Klondyke
and a few Arizonas

All First-Class Plants

Chas A. Grafton, Covina, Cal.

Early Cuthbert Raspberry Plants

I have Twenty-Five Thousand Early Cuthbert Raspberry Plants to sell at Six Dollars per Thousand.

L. D. Woodworth, Covina, Cal.

STRAWBERRY PLANTS

800,000 Brandywines
400,000 A1
20,000 Pride of Michigan

All grown from Kellogg Stock and guaranteed First-Class Plants. Write for prices.

F. P. BALDOSSER, Covina, California

DEWBERRY PLANTS

For Sale, 10,000 Mammoth Dewberry Plants, very prolific and a good market variety. Extra early.

Oak View Berry Farm
R. J. Hunter, Prop. Cridley, Cal.

Lady Thompson Strawberry Plants
$1.50 per Thousand
M. J. Rooks - Azusa, Cal.

The Famous **Klondike** and **Mammoth Brandywine Strawberry Plants** For Sale.
D. E. CAZAD, R. D. 2, ORANGE, CAL.

500,000 Brandywine Arizona and Klondyke **Strawberry Plants**
At bottom prices. All first-class and from the east last spring. **G. W. Mullendore, Covina, Cal.**

PRUNING.

The practical grower of trees and shrubs is frequently taken to task by the would-be tree protector because he cuts out branches which are neither broken nor dead, but are in a healthy, flourishing condition. The argument used by this critic is that in nature it is not necessary to cut out branches and otherwise mutilate trees; that, in order to allow the plant to assume its natural and normal form, no pruning should be done and that the use of the knife is detrimental to the best interests of the tree, and should therefore be discouraged. The practical grower, however, knows too well the results which follow from this laissez faire method of handling trees in the orchards, parks, and other ornamental plantations.

Under natural conditions plants grow thickly; one crowds upon the other, and in that way all superfluous individuals as well as branches are crowded out. Under artificial conditions there is no such force at work. Plants are placed at distances which prevent this natural pruning. The increased amount of food available to plants under artificial conditions frequently excites growth, so that the distance between the different whorls of branches, which naturally develop from near the end of the growth of each season, becomes great, thus giving the plant an open form and the appearance of having been built by stories. By a judicious use of the pruning knife the gardener shortens this annual growth, thus reducing the distance between the branches formed in successive years, with the results that the tree has a more compact and symmetrical form and therefore is better suited to serve the purpose of an orchard or ornamental tree.

What has been said in regard to the heading in or cutting back of orchard and ornamental trees applies with equal force to shrubs. Care should be exercised, however, in this heading-back process in order that the plant so pruned should not asume an artificial form. The head-in should be a corrective process rather than one which is directive; that is, the heading-in should only be sufficient to counterbalance the augmented growth which results from the increased food supply of plants grown under high culture.

BERRY GROWING.

Permit me, as one of your many appreciative readers, to write a few lines for the Cultivator, for I believe it is but fair and just that someone who has the experience in raising honest berry plants give your correspondent, Mr. Mitting, in a recent Cultivator an item of correction. It is this: His advice and method of raising berry plants, is to take a long-handled shovel and put a shovelful of soil on each tier of cane. I may be pardoned for stating that the writer of this knows from more than 14 years of experience in raising berry plants, that the aforesaid method is radically all wrong.

Say, brother berry grower, you will say, "Well; they'll grow." I answer, "Oh yes, and yield a little income." Let's reason together. We all do, or at least should know that nature's way of growing those same plants is from the tips only. Small wonder that this writer saw fit to plow up his whole patch of Logans, because of so many unproductive vines. I could tell you of some remarkable experiences and observations in the past, along those lines, but the above will suffice.

Now if you care to listen; will tell you how to put down all that class of plants for its no trick at all. Simply take a steel garden trowel, a spade, or light iron bar, in one hand and grasp the vine with the other, then set down the vine and pack the soil 2 inches on heavy soils, and you will grow the finest plants if done not much later than the last of October in this part of California. Will add, that with the spade I myself have put down many thousands of plants, and the beauty of it was that at the end of the job I always know about how many plants there'll be. Will say that I have none for sale whatever.—H. W. Hoit, Garden.

"You see," explained the investigated packer, "we sell what we can and what we can't sell we can and then we can sell it." Which thoroughly explained the situation.

An Abundance of Fruit

of highest quality, finely colored and flavored, is the direct result of supplying a complete fertilizer containing from 7 to 12 per cent. of

POTASH

to the tree, vine or bush.

"Plant Food" is a book well worth a place in the library of any fruit grower. We will gladly mail it to all applicants.

GERMAN KALI WORKS, 93 Nassau Street, New York

Fertilizers and For Profit Fertilizing

The California Fertilizer Works' Fertilizers are highly recommended by several members of the Tulare County Citrus Fruit Exchange, Fresno vineyardists and all others who have used them, for having given **grand results** and **profits.**

Office Of The
California Fertilizer Works
Corner 11th and Market Sts. San Francisco, Cal.

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Up-to-Date Berries

IN CALIFORNIA

CATALOGUE NOW READY

A. Mitting Santa Cruz California

Walnut Trees

Come and Let Me Show You the Best Trees on the Market

Seedlings—Several Thousand grown from the very best selected, hand picked by myself from grafted trees. Placentia Perfection and Santa Barbara Soft Shell. **Grafted Trees**—500 Placentia Perfection, extra selected and absolutely guaranteed.

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Improved Deep Well Propeller Pump
FOR IRRIGATING AND MINING

After devoting several years to deep study and experiments, and the expenditure of many thousands of dollars, this pump has been brought up to the point where it is practically indestructable, has an efficiency not to be excelled, and is ready to try conclusions with any deep well pump on earth. The principal improvement consists of a screw guide inserted in casing coupling and a ball bearing placed in each guide, which gives absolute protection to all parts of the pump, regardless of the amount of sand or grit which the water may contain. Write for catalogue and full description of these important improvements.

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TO FARMERS AND DAIRYMEN

It will pay every farmer or every farmer's wife to sit right down and write for Sharples "Business Dairying." This valuable book contains information that can be found in no other book, and will help any dairyman to make his business more profitable. It tells How to Feed, What to Feed, How to Care for Feed, What Foods Produce Greatest Amount of Milk, How to Care for the Dairy Cow in the way to get best results, and the whole book is practical. To get all the good out of your milk you should of course use

THE SHARPLES TUBULAR CREAM SEPARATOR

It is not only guaranteed to more than pay for itself annually, but the ease with which you can skim, the low can, the self-oiling bearings, the simple **Tubular** bowl with only one little part inside to wash, the moderate price, are all points you should know about. Send today for the free "Business Dairying" and full information about the Sharples Tubular, giving number of cows you keep. Ask for booklet G. 260

Mrs. J. Renken, Trenton, Ia., says "We cleared $100.00 in six months off seven cows."

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Southern Chief DISC PLOWS

MOLINE PLOWS AND OTHER FLYING DUTCHMAN FARM TOOLS

Built with Special Reference to the Requirements :: of PACIFIC COAST Farmers and Orchardists ::

These plows are made entirely of steel, malleable and cast iron. They are well braced, strong and easily controlled. The three disc can be converted into a two disc, and the four disc is easily changed into a two or three disc. A farmer having a two disc can make a three disc by securing the extra parts.

LEVER RODS SLIDE THROUGH ADJUSTABLE CONNECTIONS
Keeping the Levers and Operator Always in the Same Relative Positions.

The location of seat, wheels and hitch are right, giving good penetrating power and permitting of turning to either right or left. The front wheel is under control at all times and the plow can be steered at will.

The Orchard Axle Attachment

with which either size of these plows can be equipped is a splendid thing for orchard plowing, and especially where it is desirable to work up under the branches close to the trees.

Permits of Closer Work than Can be Done with a Walking Plow

The plow with this attachment can be used for general work as well as for orchard plowing.

Made in Two, Three and Four Disc

SIMPLE WITHOUT SACRIFICE OF STRENGTH, AND THE QUALITY OF WORK CANNOT BE EXCELLED BY ANY DISC PLOW AT ANY PRICE

All levers are convenient for the operator, easy to control in raising or lowering plow and for guiding purposes. The bearings are long and made of chilled cast iron, insuring wearing qualities. The foot trip for rear wheel permits the plow to turn either way, and also serves as a raising lever. The method of raising and lowering front furrow wheel is sure to be a source of delight to the operator. It does away with the inconvenient lever in **general use**, which is usually too **long** on a **two disc** and too **short** on a **three disc**. The elasticity of the spring board hitch relieves the plow of dead shock and severe strain.

ASK YOUR DEALER TO SHOW YOU THESE PLOWS

Send us your name and address, enclose four cents in stamps to pay postage and mailing, and we will send you our Flying Dutchman Song Book and Junior Catalogue Combined, containing Twenty-six Old Familiar Songs with words and music.

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Makers of the Famous Moline Plows and Other Flying Dutchman Farm Tools, Mandt Wagons and Bob Sleighs, Light Running National Manure Spreader and Henney Buggies

When writing advertisers, mention Cultivator.

Live Stock and Dairy

By Mrs. Minna E. Sherman, Fresno, Cal.

Digestion of the Cow

The dairyman rather under feeds his cow, thinking that ten cows paying a small profit is better than having five pay the same profit. For sure, if one dies the loss is not so great! This is like the merchant who sold one year a hundred bolts of cloth at a loss of a dollar a bolt, the next year sold two hundred still at a loss of a dollar a bolt, and then congratulated himself on the increase of his business.

The readers of the Cultivator having one, two, or three cows, that have written to me, seem nearly all disposed to over-feed the cows, with concentrated foods. The Experiment Stations have discovered important truths that the cow feeder should understand, in regard to the amount of food a cow can assimilate, and still remain in vigorous condition.

The amount of concentrated food a cow can use has been demonstrated by careful experiments, as well as the proper proportions of concentrated food to the more bulky ones. Also the necessity of abundant water for cows to soften the food in regurgitation. It has been found that it does not pay in feeding the average cow of one thousand pounds in weight, to exceed eight pounds in their concentrated foods, or, about one third of the required 24 pounds of nurtiment should be in concentrated form and sixteen pounds in the more bulky form of hay or silage.

It takes a superior cow to pay a profit on heavy feeding, the average cow has neither the inheritance or the trained capacity to produce the required amount of butter fat to make it profitable. The consumption of food is not all, it needs to be assimilated. The excessive grain ration is balanced by succulent foods. There is truth in the clumsy expression that grain burns up the cows stomach. Green food, silage, or oil cake will help digest the grain and should be fed when forcing a cow on grain feed. Oil cake will aid a cow to use fifteen to twenty pounds of grain a day for a considerable time without going off her feed. It is not economical to feed these excessive amounts, though it is often done for record making.

The rule for cow feeding is one pound of such concentrated foods as bran, corn meal, rolled barley, oil cake or coconut cake, to two pounds of roughage, such as hay, wheat straw, corn fodder, corn silage, or like materials. Water is used by the cow in the proportion of four pounds for every pound of dry feed she consumes. Watering a cow once, twice, or three times in twenty four hours will result in a loss of milk. A cow must have fresh water at hand all the time, to drink at will. The average amount of water used by cows in milking varies greatly in the different experiments, all the way from eight to twelve gallons in twenty four hours.

The need of water is varied by the roughage the cows receive, those on silage require less than those on hay. Succulency of the silage aids digestion in the cow. Yes! If we only realized it, and used more in our own food we would be better in health. If we would eat two thirds of our food as fruit, green vegetables or salads, to every pound of meat, potatoes and bread stuffs; the use of oils, olive oil in salads etc., is not considered enough on the family table. Many a puny fretful child of tender years suffers from indigestion, as it is fed largely on potatoes and cereals. Olive oil brings vigor to these cases when made a moderate part of the food for six months.

The cow's stomach is often overburdened with a mass of dry matter, heavy grain and woody hay; she cannot manage to digest the mass. Corn silage, beet pulp and brewers grains all increase the milk flow and bring the cow up to a high degree of health. Many feeders cannot obtain these feeds and have no pasture at this season of the year. In my own herd I used to substitute chopped alfalfa hay, wetting it down well and allowing it to stand covered over night. It heats a little. The grain ration was placed on ten pounds of the wet alfalfa chop and fed. The cow should have long hay in the mangers or wheat straw in their racks.

There are dairymen around Fresno that feed the cows entirely on alfalfa hay and wheat straw; the cows are apt to grow thin before the green grass comes in, but they find it pays them to do so rather than to feed bran at twenty four dollars a ton, to cows that cannot make over two hundred and fifty pounds of butter a year.

Barley hay or straw should not be fed to dairy cows. Why? Well I have never failed to find they dropped off in their milk whenever they had any barley hay mixed with the oat or wheat hay. We grow mixed wheat, oat and barley hay for the horses, and try to have straight oats and wheat hay for cows and stallions. Wheat hay does not affect them as quickly, but is not as good as oat hay. Of course none of them equal alfalfa as food for cows.

Of rations we used before we built the silos, the following gave us the best returns: Five and two third pounds of heavy bran, and two and two thirds pounds of rolled barley. When we had it, we added corn, making the barley and corn into a mixture, and taking the two and two third pounds from the mixture, and five pounds of alfalfa hay. Ten pounds of the hay was wetted and chopped to feed the grain on in the mangers. This was the average daily feed per cow; some received a double feed of this, others half feeds. Without chopping and moistening the following was fed: Fifteen pounds of alfalfa hay, seven pounds of shorts, two pounds of dried malt sprouts. By making this ration: four pounds shorts, three pounds bran and adding one pound of oil cake the ration is greatly improved.

THE MANE AND TAIL.

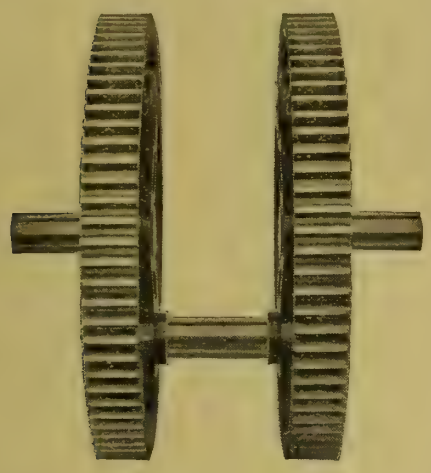
Many a boy or young man on the farm who is anxious to keep his horses looking well at all times often feels discouraged over the difficulty of keeping the tails and manes in satisfactory condition. It is brought home with special force to these when they visit the city and see the condition of the mane and tail of the well kept city horse. Not that there are no horses on the farm that are kept just as well as in the city, but during a day's outing one will see a much greater number of well groomed horses in the latter place.

A writer for the Journal of Agriculture says the trouble is in keeping the tails from getting into what is known as the "lamb tail" condition. This, he says, is largely due to the fact that the hair has not been thoroughly cleaned, so that it adheres in clusters instead of remaining separate, as the hair should. The first thing to be done therefore, is to give it a thorough washing out, after which it should be thoroughly combed until every ringlet has disappeared. An ordinary mane comb may be purchased for 20 or 25 cents, and is absolutely essential. After getting the hair clean it is only necessary to spend a little time with the comb each day. Of course, if the stables are dirty it is almost impossible to maintain the proper condition, but if a reasonable amount of bedding is used there is no reason why every horse should not show a shiny, wavy mane and tail. Nothing is more common than to see the ordinary curry-comb used as a tail comb, and it is scarcely necessary to say that this is a mistake, because the teeth, if the comb is used freely, will cut the hairs rather than separate them .We are fully persuaded that a minute or two spent each day with a good mane comb wil be sufficient time to keep these parts in good condition, and if this is done there is no question but what it adds 50 per cent. to the appearance of an animal.

For a Good, Practical Milking Machine see the O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

See Us for Sanitary Milk Bottles. O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

The Pomona Pumps Are Best



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BECAUSE—

Using machine cut and slow running gears, they are

PERFECTLY NOISELESS.

They use stepped gearing with no break in the tooth contact, doing away with all rattle and vibration.

BECAUSE—

They have an ideal motion of the pump rods, which consists of a uniform continuous slow up motion, a smooth, quick down movement with absolutely no jerk in starting the rods upward eliminating all rod breakages and valve troubles.

BECAUSE—

They will save you money in cost for power. We use machine cut gearing which alone saves ten per cent. We have a leverage in our gearing which other pump makers do not have and which they do not tell you about when trying to down us.

BECAUSE—

In pumping through long pipe lines, they deliver a continuous steady stream.

They do not hammer out your pipe line by irregular pulsations of the water column.

They save power by keeping the water in continuous motion.

BECAUSE—

They are fitted with improved oiling devices that can be filled without stopping. Pumps may run for weeks continuously.

BECAUSE—

We have advantages in our pumps that investigators appreciate at once, consequently, where one goes others follow and we are fast taking the country.

BECAUSE—

We give a guarantee of satisfaction with every plant.

Send for catalog.

Pomona Manufacturing Company

Makers

Pomona, California

CRAZE FOR SHEEP.

A few hours spent at the Chicago sheep market most any day of the week would convince the casual observer that the country has gone daffy on sheep. To get into the business is the ambition of hundreds who for the past year or two have been reading of the wonderful profits made in sheep industry. We do not want to infer that we deprecate this ambition, but on the other hand feel disposed to say that these buyers woke up too late. Most of them should have been in the business long ago. To buy breeding stock when the tide is running high and competition is fierce is not always the best time, but still we believe that the investment is good, even at current rates. Better by far to get in late than not at all, and it is a good sign that so many are taking kindly to the industry, for a few years ago sheep were not popular with many farmers, and those who had them sold out root and branch. Now that the pendulum has swung to the other side of the arc, all are trying to get in.

The high prices for sheep and lambs may not always last, but it is pretty safe betting that values will not swing back to free trade times of ten years ago.

As long as the public appetite favors mutton, so long will it pay to raise sheep and there will be no danger of getting an oversupply with the quality constantly improving.—

Shepherd's Criterion.

Queries

Abortion in Cows.

I have three cows and two one-year-old heifers that I can not get with calf. They have been served five or six times and are still coming back. They run with sire in pasture, but are taken up as soon as served. The sire served two of my neighbors cows last summer that had aborted and not treated. Do you think it can be the cause? Please let me know what to do and give treatment if any.—A Turlock subscriber.

These questions have been fully answered recently in replies to different correspondents. There can be little doubt that the contagion was transmitted from the sire to these young cows. If these cows have any discharges it will be useless to breed them until all inflammation has subsided.

If discharges ever so slight are present, wash the cows out daily with warm water adding a tablespoonful of lysol to each gallon of water used. When cured use the yeast treatment as directed in the last Cultivator.—M. E. S.

Indigestion.

Please tell me in your next paper what makes my cows bloat on dry feed. I feed alfalfa & pumpkins, bran & corn-meal. The hay was cut when some of it was beginning to bloom. Some of them bloat every day and have for a month, Yours truly.—J. P. S., Lordsburg.

Cows bloat on dry feed from indigestion caused by lack of succulency in the ration. This is usually the case, and can be remedied by giving them the bran moistened. Also see that they have water at hand at all times. Then sweeten their stomachs by the use of baking soda. Add a heaping teaspoonful to the grain feed of each cow. When feeding dry food, if the price is not unreasonable, a handful of oil cake meal added to each cows food will greatly aid her digestion of the dryer foods.—M. E. S.

What Is a Good Slop?

Can you give me a good ration for hog slop?—J. P. R., Bakersfield.

Corn meal and heavy wheat middlings made into a slop are much better and eaten with greater relish by hogs than an exclusive meal slop.

Best Way to Wean.

What is the best time to wean pigs?—L. M., Azusa.

The best time to wean pigs is to begin as soon as they will eat solid food.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fere Outfits See O. J. Weder Co., 555-557 So. Los Angeles St., Los Angeles.

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FOR UNITED STATES SEPARATORS

STATE DAIRYMEN'S CONVENTIONS

MAINE	NEW HAMPSHIRE	VERMONT
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98	98	98¼

The UNITED STATES SEPARATOR holds the World's Record for Closest Separation of Cream, and the scores above begin another year's list of the many victories which show that

The UNITED STATES SEPARATOR delivers the Cream in Smoothest and Best Condition for making the finest quality of butter.

Send for free catalogue telling ALL about the U. S. Ask for "Construction Catalogue No. 20," and write today.

VERMONT FARM MACHINE CO.

Bellows Falls, Vt.

EIGHTEEN DISTRIBUTING WAREHOUSES

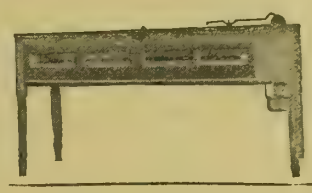
442

Prompt Delivery Assured California Customers from San Francisco warehouse. No delays. Address all letters to Bellows Falls, Vt.

Starbuck's Barred Plymouth Rocks

We Trap-Nest Our Hens. Bird Laying Qualities are inherited. Why set from poor layers? We use pedigreed cockerels whose mothers have for over six generations laid over 200 eggs per year. Eggs from old hens, $1.50 and $2.00 per setting of fifteen; from pullets $1.00 per setting of 15.

Wm. Starbuck - Fullerton, Cal.



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They Are the Best on Earth

Principal Incubator Co., Grafton, Cal.

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Now is the time to go for gophers with

Bille's Gopher Poison

The Gophers will go for it and it will go for them good and plenty every time

This is a photo of 201 killed in one day on a ten acre field before they could get back to their holes, with one bottle of BILLE'S GOPHER POISON

Endorsed by Agricultural Colleges and Experiment Stations. Not one of the ordinary poisons, but in a class by itself. Has had greatest success in the Middle West. The secret being that it is most attractive to gophers, squirrels, etc., and sure death to them. It gives the grain a glossy coating, retaining the poison for weeks. Hundreds also die in their holes by eating it there. We have bought the patent rights for this section and are selling at the eastern price of $1.25 for large bottle. The ingredients cannot be bought at a drug store for that price. Money refunded if not as represented—so printed on the bottle. If your dealer does not keep it, send $2.50 for two bottles, express prepaid by us. Any way send for circular with affidavit of above killing and a few out of many testimonials.

Send us the names of twelve persons who keep poultry and we will send you FREE "The Poultry Manual," by those high authorities, F. L. Sewell and Ida E. Tilson, profusely illustrated.

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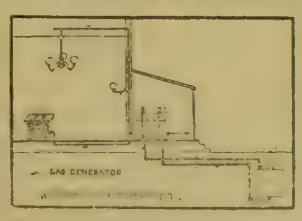
Manufacturers of the Celebrated West Coast Poultry Foods

WESTERN GAS GENERATORS



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The most reliable and cheapest GASOLINE GAS GENERATOR ever put on the market.

AUTOMATIC SAFE ECONOMICAL.

Read what Mr. A. W. Foster, President of the California Northwestern Railway has about them:

Gentlemen:

Replying to yours of the 20th inst., I would state that the plant installed for me by the Western Gas and Power Company, on my Hopland Stock Farm, is giving entire satisfaction, and I cannot speak too highly of it. Yours truly, A. W. Foster.

Mr. Foster used an acetylene gas generator before we installed our Western.

WESTERN GAS & POWER CO. 1842-48 Seventh St., Oakland, Cal.

20 Reasons
WHY THE
Addison Pump

Is Better Than All Others

1. It will pump more water with less power.
2. It is more substantially constructed.
3. Has no overhanging bearings to spring and cause friction.
4. Absolutely uniform—does not break rods.
5. Plunger leather can be changed with less trouble and expense.
6. Water discharge in continuous stream—no pulsations.
7. Noiseless in operation.
8. Has no jar or hammer.
9. Perfectly balanced, no braces are required to keep pump in position.
10. Will be in good working order when other pumps with erratic or variable motion are in the scrap pile.
11. The frame contains within itself the main bearings, which are unusually large.
12. The cranks consist of three gearwheels, pinned on opposite sides, thus forming a double crank.
13. The outside gears are shrouded on the inside and the center gear on both sides. The pinions are placed on two counter-shafts in main frame in such a manner that the shrouds of the gears rest on the shrouds of the pinions, forming a bearing to carry the load when pumping, and thus keeping the teeth in proper mesh, giving the greatest strength and least wear and distributing the weight over six boxes.
14. The pitman rods are of the same length and are forged from one solid piece of best machine steel.
15. The driving and counter-shafts have only 22 inches between the bearings which carry the load, and with the size of shaft used makes it impossible to swing out of line, under the heaviest of work.
16. The cross-heads are planed and fitted with tempered brass strips made to fit groves in columns; so arranged that wear can be taken up.
17. Both pump rods are fastened to the cross-head pins, so there is no pulling strain on the cross-head proper.
18. By our specially constructed couplings, rods are as strong at joints as at any other part.
19. The Addison Patent Straight-Waterway Valves offer a free passage for water, causing less friction than in any other valve.
20. Pump can be operated without a stop as the following testimonial proves:

Addison Pump Co.,
Pomona, Cal.
Gentlemen:—
In reply to your inquiry of Dec. 24th., I am glad to say that your pump has now worked steadily for over two years with entire satisfaction.
As far as I can recall it has never had to be repaired, and has never missed a stroke.
Very truly,
J. H. McBRIDE.
Pasadena, Cal., Dec. 28, 1906.

If you will come to Pomona and spend a day with us we will show you our pump and other pumps in operation, then leave it to your own judgment to select the best.
We give an iron clad guarantee with every plant.

IT WILL PAY YOU TO INVESTIGATE THE ADDISON BEFORE PURCHASING A PUMP.
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VETERINARY ADVICE FREE

Dr. S. A. Tuttle, a veterinary surgeon of long experience has written a book entitled "Veterinary Experience" on the diseases of horses, giving symptoms and treatment in plain terms. It is fully illustrated with diagrams showing the skeleton and circulatory and digestive systems with references that make them plain. Tells how to buy a horse and know whether it is sound or not. Every horse owner should have one. It is sent to any one.

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is the only guaranteed cure for Colic, Curb, recent Shoe Boils and Callous. It locates lameness, relieves and cures Spavins, Ring Bone, Cockle Joints, Grease Heel, Scratches, Catarrh, etc. Send today and get the book free and information about Dr. Tuttle's specifics.

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Thoroughbred Poland China Swine
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High Grade Stock of Best Strains.
Young Stock For Sale.
M. Bassett - - Hanford, Cal.

CREAMERY VENTILATION.

Creamery ventilation, like all other ventilation, involves the removing of the air in the building and the introduction of fresh air to take its place, writes A. Slaughter, in the New York Creamery Journal. The question then resolves itself into how we can most effectively and economically change the air in the creamery.

We should remember that force must always be applied, whether we use the warm air flue, or, as it is sometimes termed, natural draft, or the mechanical forced air current; and also that force always costs. The system of ventilation may be most effective and yet be so costly in operation as to preclude its use. On the other hand, a system may be economical, but lack entirely in efficiency. We must, therefore, seek a method that will be both affective and economical.

In the average creamery, where the machinery is in operation a part of the time only, mechanical ventilation lacks in efficienty, as ventilation stops when the fan, which must be operated by the engine, stops. But where the plant, like some of the central creameries is operated all day, or where an electric motor may be used, mechanical ventilation by means of the fan and properly arranged flues becomes the ideal system.

To over come this defect in the average creamery, I would install a system combining natural draft with mechanical ventilation.

It is, of course, impossible to give a definite plan without knowing something of the plan of the building and its equipment. We may however, suggest some general ideas.

Where overhead space is not to be utilized for an upstairs, I would build the ceiling in shape that the warm air and vapor would concentrate at one point. At this point I would place a discharge ventilating flue. This flue would also have a branch extending down close to the floor and so constructed as to be easily closed or open at either the ceiling or floor opening. I would also provide the flue with fan and such connections as would enable me to use the fan when machinery was running and natural draft when machinery was idle. The intake air flues should be so arranged as to temper or warm the air in cold and cool it in warm weather. It will be necessary to have two sets of these flues. The warm air should discharge near the ceiling but at some distance from the discharge flue, while the cold air flue should enter near the floor. The cold air duct may well be a subearth duct, but if this is not advisable, it may be carried through the icehouse or refrigerator, while the warm air duct may be carried through the boiler room or in contact with heat anywhere. In operating a system of this kind, it should never be allowed to enter the creamery when the room is filled with steam or vapor, as the cold air will condense the moisture and cause it to settle on the walls, ceilings, or other surfaces exposed to it. The violation of this rule is the cause of much of the dampness and moldy conditions found in many of the modern creamery plants.

Keep the warm air coming in and the warm, moist or vaporous air going out until the vapor is all out and then allow either warm or cold air to enter as may be desired. If the warm air is allowed to continue to flow in for a short while after evidence of moisture has disappeared it will be all the better.

A system planned as here suggested and properly operated will always prove efficient.

I would have natural draft flues so constructed as to produce good, strong draft. And in case they should fail to operate, place a steampipe in them, thus warming the air and causing it to rise. However, if they are properly built, there will be no need of the steampipe. This testing is simply an application of the principle of Prof. King's system of cow barn ventilation.

"Yes," said the warden, "he was the coolest and most thoughtful convict who ever broke jail.

"You don't say?" exclaimed the visitor.

"Yes; he left behind him a note to the Governor of the State beginning: 'I hope you will pardon me for the liberty I'm taking.'"

PROTECT BIRDS AND ANIMALS.

A bill for the protection of animals, birds and fish in the forest reserves in California, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the President of the United States is hereby authorized to designate and from time to time modify the boundaries of such areas in the public forest reserves within the State of California, as should in his opinion be set aside for the protection of game or of other animals, birds, or fish, and be recognized as a breeding-place therefor.

Sec. 2. That when such areas have been so designated as provided for in section one of this Act, hunting, trapping, killing, or capture of game or of other animals, birds or fish upon the lands or in the waters of the United States within the limits of said areas shall be unlawful, except under such regulations as may be prescribed by the Secretary of Agriculture, and any persons violating the provisions of this Act shall be deemed guilty of a misdemeanor, and shall, upon conviction in any United States court of competent jurisdiction, be fined in the sum of not exceeding five hundred dollars or be imprisoned for a period not exceeding six months, or shall suffer both fine and imprisonment, in the discretion of the court: Provided, That the Secretary of Agriculture may, when necessary, authorize the capture therein of animals, birds or fish for propagation, may authorize fishing with hook or line, may permit the collection of specimens for scientific purposes, and may exempt from protection and destroy such species as he may deem injurious. Provided, further, That this Act shall not give protection to such birds or animals as are or may hereafter be declared injurious by the laws of the State or Territory in which such reserves are situated.

Sec. 3. That it is the purpose of this Act to protect from trespass the forest reserves in the State of California and the animals, birds, and fish which may be thereon, and not to interfere with the operation of the local game laws

(Mr. Smith, Chairman of the Committee having charge of this bill (which has been reported on favorably in both the Senate and House) can push it to final passage without delay, but he first desires to be convinced that there is a strong popular approval of it.

(Will you, in the interest of saving the remnants of a few valuable species now scattered, and pursued to the border line of extinction, write to Hon. S. C. Smith, House of Representatives, Washington, D. C., urging the passage of said Bill at the present session of Congress.)—Editor.

SOLD FOR TEN THOUSAND DOLLARS.

"The Syracuse, N. Y. Herald, of December 9th, reports the sale of the young Holstein bull, The Milk and Butter King, (whose picture was printed on page 959 of the current volume) by Mr. C. S. Averill to Messrs. Crouse and Brockway, for use in the herds of the former at Homer and of the latter at Auburn, both in New York. The price paid is said to have been an even $10,000.

This bull is a descendant of two famous western animals. His sire was a grandson of Johanna Aaggie's Sarcastic Lad, bred and owned by Gillett and Son, at Rosedale, Wisconsin, and his dam was Mercedes Julip's Pieterje, bred by Alfred Wilkins, Galt, Ill., and making the astonishing record of 23½ pounds of butter fat in seven days in an official test for Mr. T. S. Tompkins, at White Bear Lake, Minn., who purchased her of Mr. W. R. Gates, of our neighboring town of Oakland, who for some years has had another of her sons at the head of his heard."

—Hoard's Dairyman.

We are pleased to state that the Mr. Tompkins mentioned in the above article is now a Californian and is engaged in business in this city being President of the West Coast Stock Food Company., whose advertisements appear in this paper. From the quality of the "West Coast" goods that this company is turning out and from its largely increasing trade, it would seem that he is giving the same skill and attention to the manufacture of stock and poultry foods that he must have given to the care and feeding of his live stock back in Minnesota.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

Warranted to Give Satisfaction.
Gombault's Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

OAKHURST JERSEYS

Fine young Bulls, by a magnificent son of Golden Ferns, had out of imported cows. Also a bull calf out of a daughter of Golden Lad by a son of Golden Lad, making him 50 percent Golden Lad. We sold his full brother to the late Gen. Shafter, who won in every class he showed him in at Sacramento in 1905. Will sell at low prices considering breeding, to make room for new stock.

L. BRADBURY DUARTE, CALIFORNIA

LEMONITA HERD
Leffingwell Rancho, Whittier, Cal.
Service bull "SARGENT FOX," 64833. Bred on the Island of Jersey. Sire, the great Flying Fox, that sold at auction for $7.5000. Dam, Miss Sargent, reserve winner over Jersey; winner of seven first prizes and five championship cups "One of the grandest cows the island has ever produced."

Live Oaks Farm
Frank A. Meacham, Proprietor
Importer and Breeder of RED POLLED CATTLE, SHROPSHIRE SHEEP, RAMBOUILLET SHEEP, HORNLESS AMERICAN MERINO SHEEP. Both sexes for sale. Take electric car at Petaluma or Santa Rosa for Live Oaks Station. Address all mail to
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Berkshire Hogs
Dorset and Rambouillet Sheep
Short Horn Cattle
Trotting Horses
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Imported Clydesdale and Hackney Stallions
I sell better stallions for less money than any man in the State. Can sell you a good stallion for $1,000
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Thoroughbred Holstein Bulls and Heifers
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Single Comb White Leghorns
Eggs, $1.50 per setting of 15, $6.00 per hundred
High fertility guaranteed.
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The Whiting Jersey Stock Farm Company
Is making the very best strains of blood fresh from the Island of Jersey a specialty.
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John Lynch Breeder of Registered **Shorthorns**
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Thoroughbred Poland China Pigs and Shoats
Of both sexes for sale at reduced rates for 30 days. Address, W. R. McCaslin & Son, Walsh Station, Sacramento County, Cal.

FOR SALE

Some Black Missouri Jacks ready for service.

W. J. Haslam - Winchester, Cal.

The Vegetable Garden

By ERNEST BRAUNTON

CUCUMBERS FOR EARLY MARKET

IN CERTAIN localities along the Atlantic coast special types of the trucking industry have been developed. One of the most interesting phases of this development is found in the methods employed in bringing the cucumber to marketable maturity.

While in most localities cucumbers can be successfully grown in the open ground, in some situations it has been found advantageous and very profitable to go to the expense of starting cucumbers under glass in cold frames, and developing them in this situation until they fill the space covered by the frames, after which time, if weather conditions are favorable, the sash and frames are removed and the plants are allowed to occupy the entire area.

This branch of the cucumber industry is frequently combined with the cultivation of lettuce and is carried on in much the same way that the lettuce and cucumber industry is conducted in the great forcing establishments in the neighborhood of Boston and other northern cities. The growing and marketing of early cucumbers in this state. as described in this department a few weeks ago has proven very renumerative in many parts of the state Early cucumbers always command a good price in the markets of San Francisco and Los Angeles and somewhat in demand at many lesser points.

COMMERCIAL MUSHROOMS.

The successful cultivation of mushrooms in America has not been so general as in most of the European countries. It is in France and in England that the mushroom industry has been best developed. France is, properly speaking, the home of the present mushroom industry.

Unusual interest has been shown in the United States in the growth of mushrooms within the past few years. and it is to be hoped and expected that within the next ten years the industry will develop to the fullest limit of the market demand.

The latter will, of course, be stimulated and developed by the increasing popular appreciation of this product. In some cities and towns there is already a good market demand for mushrooms, while in others they may be sold only directly to special customers. This should be borne in mind by prospective growers.

GROWING ONIONS.

The Texas Station has made a study of the comparative economy of hand culture and horse culture and of bed and field planting of onions with the following results:

"Hand culture with onions was more profitable than horse culture. Planting seeds in beds and transplanting to the field, with either hand or horse cultivated onions was more profitable than planting seeds in the field. It cost less (where labor ranged from 50 cents to 75 cents per day) to grow an acre of onions to maturity by planting the seeds in beds than by planting in the open field."

The New York State Station has recently made an interesting and valuable contribution to the subject of the fertilizing of onions. It was found that in certain market gardening regions, notably on Long Island, commercial fertilizers are frequently applied to onions at as high rate as a ton of high-grade fertilizer per acre.

The investigations of the station, while not conclusive as to the exact amount which it is most profitable to apply, which of course varies largely with the condtions of soil, season, etc., show quite clearly that the present practice supplies an amount of plant food far in excess of the needs of the largest crop, and is therefore wasteful.

"Considering the varying price of the marketable product, the close margin of profit from heavy manuring with fertilizers even with fairly good prices for the crop product, and the vicissitudes of the crop due to the limitations of season, the onion grower runs great risk of dimnishing profits when he uses 1500 and 2000 pounds of commercial manure per acre."

When writing advertisers mention Cultivator

CONTROL POTATO DISEASES.

Potato planters should avoid planting those varieties of potatoes that have a special tendency to disease. There is a great difference in varieties in this respect.

The soil of the older potato growing sections is apparently badly infested with the germs of potato rot, which will probably be troublesome every year, and in exceptionally cool, wet years, like that of 1904, it will cause serious injury.

It will probably pay potato growers, in sections where potato blight and rot have been especially abundant the past year, to spray their potato vines at least three times with Bordeaux mixture, beginning when the vines are about six inches high and repeating once every two weeks. The aim should be to keep the entire vine well covered with this mixture so as to render it immune to the germs of potato disease. There are a variety of spray pumps adapted to this purpose. Most of the pumps that work best for applying Paris green in water are adapted to applying Bordeaux mixture. They should have all parts made of brass or copper.

Paris green may be applied in Bordeaux mixture without additional expense and with satisfactory results.

CELERY BLIGHT.

While the weather conditions are important factors in producing celery blight as well as all other fungous disease, it is true that no fungus disease will be produced unless the spores of the particular fungus that produce the disease in question are in contact with the plant and capable of germinating. Hence if the spores of the blight-producing fungus can be kept away from the plants or kept from germinating, the blight will not be produced whatever the weather conditions may be. In combating this disease, therefore, it is necessary either to produce those conditions under which the spores of the fungus cannot come into contact with the celery leaves, or to bring about those conditions under which the spores are unable to germinate.

STRAWBERRIES FOR HONOLULU.

The Cultivator is always pleased to chronicle testimonials touching the reliability of its advertisers. We have before us a letter from Mrs. Charles M. Cooke, of Honolulu in which she says: "You may be interested and also pleased, to learn that a shipment of strawberry plants which I ordered From Mr. G. H. Hopkins, of the Fairview Farm Nursery, Burbank, California, reached me in fine condition and appears in every way satisfactory,"

When shipments so far from home are proven satisfactory as to quality and condition received, home customers need have no fear as to the reliability of the shipper.

TOMATO CULTURE.

The results of this season seem to show that there is but little difference between the period of ripening of tomato plants that are pruned and trained to stakes and of those that are allowed to grow on the ground in a natural way, and consequently no profit from the operation of pruning. But these results are contrary to the experience of some of the most practical men, and should not be thought conclusive.

SUGAR FACTORY.

At the Los Alamitos sugar factory the Osmose run still continues on molasses from the season's best campaign. Several hundred thousand pounds of sugar will thus be added to the season's output.

At the same time the big sugar mill is being put in first class shape to handle the beets from 7000 acres and the present outlook makes it appear that it will be taxed to its utmost the coming season.

It's a poor scale that hasn't two weighs.

Piles Cured In 6 To 14 Days.

PAZO OINTMENT is guaranteed to cure any case of Itching, Blind, Bleeding or Protruding Piles in 6 to 14 days or money refunded. 50 cents.

If the dealers would only be fair to you and me, you would have less lamp troubles and I would make more chimneys.

If a MACBETH lamp-chimney was sold every time one is asked for, I would make all the lamp-chimneys instead of half of them.

The Index explains how to get a MACBETH chimney to fit every lamp, and how to care for lamps. Sent free to everyone asking for it.

Address, MACBETH, Pittsburgh.

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POULTRY SUPPLIES
STOCK FOODS
BEE SUPPLIES
Send For Our Catalogues
CHAS. H. LILLY CO.
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Crimson Winter Rhubarb
Original Burbank Strain
$1.50 per Doz., $6.00 per 100, $40 per 1000
Now is good time to plant. We are the only Rhubarb Specialists on the Coast. We devote most of our time to its cultivation and improvement. We have the Best pedigreed plants ever offered of this wonderful money maker. Write or call on
J. B. WAGNER, the Rhubarb Specialist, Pasadena, Cal.

A Fine Stock of Superlative Raspberry, also Fruit Trees and Vines of All Sorts. Both Phones.
P. S.—See Article in Cultivator on Page 550, issue of December 6th.

New Muskmelon
The new muskmelon pictured and described on the Cultivator cover of Jan. 10th is handled exclusively by
JOHNSON & MUSSER SEED CO.
113 N. Main St., Los Angeles, Cal.
50c per packet, $2 per ounce

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Complete and reliable information and advice on seeds, planting, etc., in our beautifully illustrated catalogue, 1907. Mailed Free.
Highest Grade SEEDS ONLY
New and rare varieties of Flower and Vegetable Seeds, Fruit Trees, Ornamental Plants, Roses, etc.
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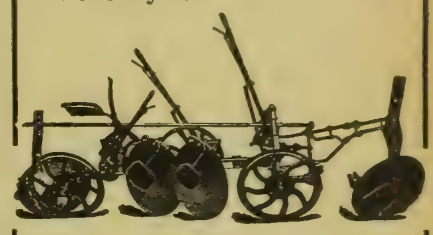
Chilled or Steel and you'll be glad it rained. If you don't know why it's the best plow made, let us show you.

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FOR SALE 14,000 SEEDLING AND 2,000 GRAFTED
WALNUT TREES
Placentia Perfection, Mesange, Franquette, Santa Barbara soft shell, Santa Rosa soft shell, Prize, etc.
Every Tree Warranted Free from Disease
and warranted to grow provided they are set before April 1st, and given an irrigation when set, or given enough water at the time of setting to drive the air all out of the loose dirt and settle it so the roots can get established and immediately start to grow. This warrant is good and to prove it so one-fifth of the money to be paid shall be held by the purchaser for six months, at the end of that time if every tree is alive the remaining money shall be paid, but should any die the proportionate price or the price of the number of dead trees shall be still held until they are replaced with as good or larger tree the following spring.
The trees I have to offer this year are unusually large and very stocky, raised in light loam and good long roots.
Before buying, get my price, send for a sample tree, or better yet, come out and see them.
A. R. RIDEOUT WHITTIER NURSERY
P. O. BOX 14, WHITTIER, CAL.

Gold Medal Citrus Trees

Are fully described in our treatise of Citrus Culture, which is a trifle the best thing of its kind ever published. Contains about 50,000 words and 100 illustrations telling about oranges and lemons from the seed bed to the bearing orchard. Price 25 cents. Remember we are the largest producers of Citrus Trees in the world and stand ready to serve you with the finest nursery stock that can be grown. Correspondence invited.

San Dimas Citrus Nurseries
San Dimas, Cal.
R. M. Teague, Prop.

Growers of Trees BEFORE BUYING **Orange or Lemon Trees**

SEE MINE, OR WRITE ME ABOUT YOUR CITRUS NEEDS. IT WILL PAY YOU.
B. C. Benner Citrus Nurseries San Dimas, Ca Home Phone 18

ORANGE SEED BED STOCK

F. H. Disbrow Nurseries
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Both Phones

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Seedling Raspberries,
Strawberries, Blackberries

G. Tosetti, Lankershim, Formerly known as Toluca Cal.

LOGANBERRY PLANTS

$2.00 per hundred, $15.00 per thousand. Crandall's Early Blackberry, Cuthbert Raspberry, Lucretia Dewberry, $1.50 per hundred, $10.00 per thousand. All plants carefully packed.

Fairview Farm Nursery
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30 DAYS TRIAL
Buy From Our Factory—Save One-Third.
PRACTICAL INCUBATORS positively the best. Hatches more and stronger chicks. 10 YEARS' GUARANTEE
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THE NEW SEED COMPANY

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The Highest Quality Money Can Buy

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Send for Our Catalogue, Ready January 20

Blue Andalusians
Eggs from Cosh, Morse and Griffith prize winning, producing strains, $2.50 per setting. Incubator lots, $7.50 and $10.00 per 100.
Mrs. T. R. Griffith, 3111 Waiton Ave., Los Angeles

Whale Oil Soap

Barrels, Half Barrels, and in Kegs.

C. C. C. Anti-Carbolic Tree Spray

This spray is ready for use by simply adding cold water. It assimilates perfectly and forms no sediment. Makes the trees clean and healthy. More **effective**, and **cheaper** than lime, sulphur and salt, or caustic soda.

Whale Oil, Fish Oil, Crude Carbolic Acid, Red Arsenic

WRITE FOR PRICES

California Compounding Co., Inc.
Long Distance Telephone Works, 207-209-211 West Taylor St., San Jose, Cal.

20,000 **Citrus Trees** 20,000

Washington and Thomson's Improved **Navels** and **Valencias** Seedless Grape Fruit

One and Two-year Buds, Clean, Healthy, Vigorous Stock.
Better Secure Your Stock At Once, as the Supply Is Short.

Pollard Brothers **Alhambra, California**

With the Citrus Growers

By J. W. MILLS

EXPERIMENTAL WORK WITH ORANGES.

DURING the last dozen or more years the Department of Agriculture at Washington, D. C., and the State University, have been petitioned by the orange growers of Southern California, to carry on experiments along various lines of citrus culture in the South. It has been only within the last two years that any definite results in inaugration have been attained.

The first important research that was of direct benefit to the growers was the work done in connection with investigations of the causes of decay of the fruit in transit. This was under the direct control of Mr. G. Harold Powell of the United States Department of Agriculture.

The efforts of the growers in producing fine groves and fruit came to naught when the fruit arrived in the East with such an amount of decay that the profits were gone. But the evil did not stop there. Into the bad bargain was injected the disagreeable feature which gave the California product a bad reputation. This brought on more trouble for it gave fruit buyers in the East an excuse to cut prices. This feature was emphasised by an example of a particular grower who packed and shipped his fruit by certain methods, which landed the fruit in the Eastern market in as good condition as when it left his packing-house. One buyer handled this entire product and was glad to pay often as much as several dollars a box more for it than for some other fruit that was just as good as when taken from the trees. All the causes which were responsible for these differences, were hunted out by Mr. Powell and cases where the managers thought they were extremely careful, it was found that over one-third of the fruit bought into the packing-houses on some days was beyond the help of any power to save it, due entirely to minute injuries inflicted by pickers. It is true that managers of some packing-houses had repeatedly called attention to the fact that the fruit was not properly handled before being taken to the packing-houses, but these complaints fell on deaf ears and it was not till a Federal expert presented figures that any heed was given by most of the growers. This work resulted in the reduction of loss of fruit in some cases from over 30 per cent. to as low as 4 per cent. or 5 per cent.

At the same time the services of the State University were enlisted through a special act of the Legislature, to investigate certain problems, which will take years to work out. The work of the Federal department was confined to the finished product, the fruit after it had matured. It must reach definite results within a few months after entering the work or all its efforts would be lost. Nevertheless, it required an expert with certain qualities to back him to do this work. The work that devolves upon the State Department is of a wider nature, taking in a great many branches and requiring men of different qualifications. The State has taken the work that begins with the antecedent of the seeds, which produce the material with which they are to work up through the life history of the plants. This will involve selecting trees for seed parents, to selection of pedigreed stock for buds, growing them on various kinds of soil under various conditions and in short, studying all the various features of the industry as they are presented to the grower. This will deal with young groves, old groves going into decline and all the problems that lie between the extremes.

Two years ago, fertilizer experiments were started on a co-operative plan with the growers of the South. At the beginning at attempt was made to collect data that might serve as a guide for the work, but it was found impossible to secure anything of value in the line of fertilization of groves, as no accurate records could be found where the application of fertilizers had been systematically carried on with subsequent records of results. It was therefore necessary to begin at the bottom and carry the work on for a number of years. Series of plots covering the essential points were laid out in the principal orange growing districts of the South, covering about 150 acres. This area was considerably reduced, but nearly all the districts are now represented. These experiments are now entering the third season and definite results may be expected in a few years.

The pathological work has progressed rapidly with some of the diseases that have shown up and a constant lookout is maintained for new troubles and in this important branch of work, trained specialists are employed.

THE MANDARIN GROUP.

Many writers on citrus fruits have placed the mandarin oranges under the species, Citrus Aurantium Linn. Others have considered it a variety of that species while some, believing it possessed distinctive, specific characteristics have followed Lourerio and have referred it to his species Citrus nobilis. In this latter view the writer concurs, and after a careful study of the matter has placed the whole group under that species, the citation of which is as follows:

The group as represented in Florida is distinct in habit of growth and in fruit from C. Aurantium. It may shade off into the first named species but where such is the case any variety in question should be relegated to the group of which it possesses the greatest number of marked characteristics. In illustration of this,—in the writer's opinion Tangerona, classed with the mandarin group in the catalogue of the Florida State Horticultural Society and in Bul. 8, U. S. D. A., Div. Pomology, should be cut out of that group and placed with the sweet oranges where it doubtless belongs. It probably contains some traces of the mandarin strain but if the specimens which have been examined were true to name, and there is every reason to believe that they were, its affinities are decidedly with the sweet oranges.

The reasons for adopting the group-name Mandarin are, that it has been longer in use and is probably more widely known than any other. Many have referred to the Tangierines as a group or sub-group distinct and separate from the Mandarins. There may be reasons of greater or less weight for this division, but in this publication the name Tangierine has been discarded in favor of the older name. No distinction can be made between the Mandarin and the Tangierine oranges so-called, more than can be made between any two distinct varieties of fruits in recognized pomological groups. Moreover, the fact must not be overlooked that in some of the world's citrus growing districts the two names are used interchangably.

Two explanations have been given for the name mandarin as applied to this group of oranges. It was given either be cause the fruit was regarded as the best of the citrus family, just as the Mandarin or grandee stood in social rank above his fellowmen, or because this orange was the fruit of the rich and therefore only within the reach of the nobility. The fact that the fruit is extensively cultivated in China and Japan and that it is there held in such high esteem leads to the belief that the first explanation is the more correct one.

One other name, "Kid-glove oranges," has been applied to the group. In explanation of the origin of this name the remarks of the late E. H. Hart are self explanatory. "The term "kid-glove" oranges as applied to Citrus nobilis, originally a joke of our facetious countryman, Colonel Dancy, of Orange Mills, was gravely accepted as a synonym by our first nomenclature committee, and like many another whimsical what-do-you-call-him, it struck where one more dignified would have glanced off." Hume

---

The son of a railroad man was punished at school. He told his father he was suffering from a misplaced switch.

Economics—Professor—"Do you believe in taxing breweries?"

Student—"I do; to their utmost capacity."

Citrus Deciduous Ornamental TREES Vines Palms Roses

And Every One True to Name

When you buy goods of any kind you of course find it to your interest to do business with an old established firm that has made a reputation for itself by selling dependable goods. Growing trees is no difficult matter, but to have them true to name requires great care and a thorough knowledge of the business, brought about by years of hard work and close application. We strive to give our customers, both old and new, square treatment and never to make any misrepresentations.

WE ARE UNIVERSAL PROVIDERS FOR ORCHARDS AND GARDENS.

We do not confine ourselves to fruit trees alone, but grow also an immense assortment or ornamental trees and shrubs, climbing and trailing plants, palms for house decorations and outside planting, roses in tree and bush form.

CITRUS TREES.

If you want an assortment of varieties we can supply you with the leading kinds of Oranges, Lemons, Pomelos, Limes, Citrons all grown in the great Thermal belt near Exeter, Tulare county.

GRAPEVINES.

On their own roots and grafted on Phylloxera Resistant roots. The largest stock and the most complete assortment on the Pacific Coast. Let us figure with you on your requirements. It will be worth your while

APPLES AND PEARS.

All standard sorts, budded and grafted on whole roots. No piece roots used.

CHERRIES.

A magnificient stock of standard varieties. Bing, Black, Tartarian, Lambert, Royal Ann. As money makers they lead.

APRICOTS PEACHES NECTARINES.

We have a good supply, but stocks are becoming depleted fast. If you contemplate planting this season put your order in now. Don't delay. This is good advice to follow.

ALMONDS.

The new variety Jordan. The leading sort in Spain. Also the standard Hatch seedlings: Drake's Seedling I. X. L., Ne Plus Ultra, Nonpariel on peach and almond root. Our supply is limited with a demand more active than ever before.

Calimyrna Figs

Our Great Specialty

None genuine without our seal

We also have a fine stock of

White Adriatic Mission

and other standard sorts of figs

CHESTNUTS. PECANS.

The most complete line on the Pacific Coast. Best grafted sorts and trees grown from selected seeds.

WALNUTS.

No fruit where conditions are favorable have paid such big returns as walnuts. We have a fine stock of the standard sorts in seedlings and grafted trees.

OLIVES.

In Italy, an olive grove is considered as valuable as a gold mine. The manufacture of Green and Ripe olives and Olive Oil, is now established on a firm footing in California, and a grower with a good grove is reaping a harvest from his olives. Our assortment of the leading oil and pickling varieties was never better.

BURBANK'S CREATIONS.

For the first time we are offering four of his latest and best creations. SANTA ROSA PLUM, RUTLAND PLUMCOT, PARADOX AND ROYAL WALNUTS. Write for illustrated pamphlet telling all about them.

CATALOGUE AND PRICE LIST.

Our new catalogue is the finest book of its kind ever gotten out on the Pacific Coast. It is a compendium of valuable information and should be in the hands of every fruit grower and lover of the beautiful in nature. We also print a catalogue in Spanish. Catalogue and price list mailed on application.

OUR NURSERIES AND FARMS.

Roeding Place, 640 acres.
Nursery and Propagating Department Plant No. 2, 130 acres.
General Nursery, Plant No. 3, 320 acres.
Citrus Nursery and Citrus Orchards, Exeter, Tulare, county, 100 acres.

PAID-UP CAPITAL $200,000.00

Fancher Creek Nurseries

(INCORPORATED)

GEORGE C. ROEDING, President and Manager

BOX 14, FRESNO, CALIFORNIA

CLEAN CULTURE.

The practice of keeping the ground on which the orange grove stands perfectly free from herbage and thoroughly cultivated throughout the whole year, has been indulged in by many and is still followed by some. This method has nothing to recommend it.

A soil so treated soon becomes depleted of its natural fertility and the humus soon becomes used up through constant cultivation and the application of various fertilizers. No amount of fertilizer will do the work it should, if the soil once loses its natural body and becomes deficient in humus. In spite of every effort in the line of fertilizing, such a soil will become poor and infertile; the trees will soon show the effects in their unhealthy condition, and the owner will realize it in his diminishing returns.

If clean culture is adopted, humus must be supplied in some way, and the plan used by a number of growers in hauling in manure and other vegetation, turning it under, and then allowing the winter's rains to wash it away again does not commend itself to the Cultivator as being the best practice. In passing through some of our citrus-growing districts during the past month we have noticed that clean culture is still practiced by some. One orchard in particular, on rather light soil, showed only a surface of gravel, the finer, humus-carrying parts of the soil having gone down the wash.

Added to this soil depletion was a goodly quantity of soil of all kinds, the loss of which was manifested by the numerous small channels and a few seriously large ones which were to be seen in all parts of the orchard. Such work will never bring an orchard into first-class condition.

THE KUMQUATS.

The introduction of the kumquat into Europe appears to have been quite recent. Gallesio seems not to have known it. Risso and Poiteau make no mention of it in their exhaustive work, "Histoire et Culture des Orangers." Since none of these writers refer to the kumquats, we are safe in concluding that they were not growing in Europe at the time they wrote. So far as the author has been able to find out, the kumquat was introduced into Europe by Mr. Fortune, a collector for the London Horticultural Society, who brought it with him from China to London, May 6, 1846. The oblong variety appears to have been the only one introduced by him, for in his remarks, published in the Journal of the London Horticultural Society, page 239, 1848, he says, "The fruit ripens late in the autumn, being then about the size of a large oval gooseberry." Very soon afterward specimens of the kumquat must have been forwarded to America. A. J. Downing in his Horticulturist of February, 1850, pages 375-377, gives a description of the variety Nagami with illustrations and quotes largely from the remarks of Mr. Fortune. He further makes the following statement: "We have a small tree growing on our own grounds, which was kindly sent us by Mr. Ranch, exotic florist, near Greenwood cemetery, Brooklyn. We believe Mr. Buist, of Philadelphia, and probably other men, now have it for sale, so that amateurs can make trial of it in various parts of the country." Some time later, probably very shortly after this date, it was brought to Florida. Since then several importations have been made by various nurserymen. The original trees imported by G. L. Taber, of Glen St. Mary, in 1885, were still standing in his grove in the autumn of 1901. Reasoner Bros., of Oneco, imported the variety Nagami in 1885 and the Marumi in 1890 from Japan.—Hume.

"THE FARMERS' FRIEND."

This is the title of a neat little booklet full of good things for the farmer. Though sent out as an advertisement, there is so much of real help in it that we do not hesitate to say that it will pay every farmer in the state to send for one—read it we know he will. It is splendidly printed on the very best of paper, a real artistic get up. Send in a request for one to The Pacific Guano and Fertilizer Company, 24th and Indiana Sts., San Francisco.

"Why do some husbands call their wives 'Duckie'?"

"Because they develop large bills."—

California Cultivator

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GOOD ROADS MOVEMENT.

The Cultivator rejoices that the movement for good roads, which it has advocated strenously for four years past gives promise of bearing fruit.

The Cultivator has insisted that the one thing California lacks to make it the Mecca of the nation for tourists, is good roads. In every other respect the state stands foremost, in climate, people and products. The serious drawback to our growth has been, and is our antiquated road law, which is worse than no law at all, because it does not reach conditions as they exist today and stands in the way of improvements, which might be made by private parties, or syndicates, seeking to better local conditions.

The movement started in Pasadena to vote $3,000,000 to improve the public highways in Los Angeles county is deserving of general and hearty support. The lot would amount to less than 90 cents on each $1000 of taxable property in the county, and it would add five or six times that sum to the value of every acre of land and every foot of realty in towns and cities of the county.

We talk about correcting wrong impressions, which exist in the East concerning California, and to do this we spend money advertising. We keep a development society, with high salaried officers, pounding away for contributions to controvert the erroneous impressions set afloat about California by disappointed tourists. This is money extended for nought. These representative people come here from every section of the country, and from states where good roads exist; they mire in our streets; find our country roads impassible can not tour the country in automobiles or carriages; the very thing they came to California to do, they become disgusted with the whole state and they do it more damage in telling of its shocking streets in the cities, and its bottomless roads in the country, than all the advertising we can do for years will overcome.

What we want to develop in California is a system of good roads. We want a just law that will raise a road tax, then administer it honestly and California will take care of the rest.

CALIFORNIA HARBORS.

We trust Congress will cut out politics and get down to business pretty soon, so that the river and harbor bill may receive due and immediate attention.

This bill has not yet come out of the house committee having charge of it; but it is practically agreed upon, and as presented to the house it will provide for an expenditure of approximately seventy-two millions of dollars. This will be the biggest river and harbor bill ever presented; but there seems to be a notable lack of the old-time references to graft of Congressmen in the bill. Perhaps the river and harbor bills themselves have improved in the passing years. Perhaps the temper of the country respecting them has changed. Certainly the importance of the country as a whole of its internal waterways and of its potrs of entry has been greatly increased.

California is especially interested in the harbor end of the bill, for along the coast are two or three points which may be improved to the advantage of the entire state. San Francisco bay needs money to enlarge its ship docks, San Pedro harbor needs a mint of money to make it a desirable port of entry. San Diego also needs assistance. These harbors are the vital outlets to California's foreign trade and as they are improved and enlarged the whole state will profit. Our delegation in Congress has the opportunity to do splendid work for the state in taking care of its harbor interests.

SERIOUS PROBLEM.

A subscriber of many years writes the Cultivator to ask, "what are we farmers going to do if the Mongolian laborer is denied us?" We frankly answer, we do not know. This question of help on the farm is one of the most serious problems today before the country, for, upon the agricultural prosperity of the land depends the financial and industrial success of the people.

But this problem of farm labor is not confined alone to California. Every section of the country feels it, both within the house and out of it. As much does it trouble the housewife as the man out of doors. There used to be conditions which were helpful to the farmer, but they have passed away. For instance, after the war, for a good many years, ex-soldiers could be found, in every community, who were willing and glad to work during harvest time, or at any time work along their line might he slack. Then too every apprentice claimed and was allowed two weeks in harvest, glad of the opportunity to earn extra pay, while the farmer was equally glad to secure his lusty, youthful vigor and cheerfulness. Whenever a carpenter or a blacksmith, a stone mason or a bricklayer lived in a rented house, and that house was owned by a farmer, there was pretty sure to be inserted in the lease a stipulation that the tenant should work for his landlord two weeks in harvest.

Besides these helps college boys and girls went out to the farm during vacation and most of them proved valuable assistants. By these and other means the farmer secured help in the vital period of the farm work, and in the other seasons he was often able to secure aid from among the surplus sons of neighbors, often themselves farmers. But the apprentice system itself is now in its decadence, while the few young men who are still willing, and are yet afforded the opportunity, to learn trades, would scorn to work in the fields in harvest or at any other time. Tenants no longer bind themselves to work for the landlord, and as for the surplus boys, they have hastened away to the towns to live in mean, stuffy little rooms, and to earn a precarious living at drudgery far more irksome than that which they left home to avoid.

Girls too, consider it bemeaning to work with their mothers on the farm and so become clerks in stores and offices at starvation wages. We know a farmer who has two strong boys and two big girls, all of whom have left the farm and have gone to town. The father and mother work along as well as they can, half tending the place, but it isn't producing what it should because it isn't tended.

But what are these old people to do?

In their desperation farmers nowadays are often compelled in the seasons of stress to hire tramps off the road, and in addition to getting in this way inefficient help, they often take into their homes thieves who rob them and decamp at the first opportunity. This is such a common occurence that scarcely a day passes without a record in the daily papers of farm robbery, either of clothing and valuables or a team. We believe the most efficient remedy for this undesirable condition of affairs, is a return to the old and reliable system of tenantry. Let every farmer provide a cheerful, neat and well-situated dwelling surrounded by yard and garden, in which he may install a decent, industrious man with a family, the larger the better, if they are the right sort, and sufficient help both in the fields and for the women folks may be reasonably assured. A married man is much more stable than a single one, and if he is further anchored in a cozy, cheerful home, with the privileges of a cow and chickens, and the occasional use of a horse, and the liberty to take his children to school in bad weather, he is likely to remain on year after year and prove a satisfaction to himself and to his employer.

If we are to be deprived entirely of Coolie labor, on the Pacific Coast, our crops will be lost, our gardens wasted, our vineyards destroyed,. In short we shall practically cease to be a self-supporting State. But while this will be true of California and the coast, it will also be true of every other section of the country. Truly the out-look along agricultural lines in this direction is not the most encouraging. We had better return to the ways of our fathers suggested in the paragraph above.

A VEGETABLE DOCTOR.

We have physicians for the human body. Veternarians for the animal class, and we are developing physicians for the vegetable kingdom as well.

In one of the January issues of the Literary Digest is an article, which describes the performance of Henry L. Bolley, a member of the faculty of the North Dakota Agricultural College, whose discoveries of remedies for diseases in plants have saved the farmers of America millions of dollars.

He not only diagnoses diseases of plants and vegetables, but be prescribes, as a doctor does, for their treatment and the generally accepted statement is that he is successful in his treatment.

He maintains a plant nursery or hospital, he studies the diseases of plants and cares for them just like a nurse cares for a sick patient. He has effected a cure, it is thought for flax-wilt, a serious disease in flax, by planting different species, in beds, side by side, and procuring the hardiest plants from which to save the seed expecting to secure a species that will, by and by, become free from wilt. This he expects to be able to do while he doctors the soil to free it from disease germs. In much the same way he studies wheat-smut, wheat-rust, and flax-rust as well as many other diseases of the vegetable world.

These experiments form but a small part of Professor Bolley's work, which embraces the investigation of all sorts of diseases of grain, fruit, etc., the study of weeds and their effect on soils. Bolley's discovery of the formaldehyde treatment of smut has saved farmers millions of dollars.

Much along the same line of work is that of J. W. Mills of the Riverside Experiment Station, of whom the country will hear more in the years to come.

News of Country Life in the Golden West

AGRICULTURE.

The following is the rainfall at Dinuba for the season 1906-7 to date, 7.14 inches.

The rainfall to date is 16.89 inches. Nine inches of snow have fallen since a week ago Sunday.—Chico News.

The rainfall at Hanford during the past week was 3.55 inches, making a total for the season here of over 8 inches.

The official rain figures for Soledad up to Tuesday, January 15th, are 8.20 inches; up to same date last year it was 3.24.

Eighty-seven million salmon eggs were taken this season in the three Government fisheries at Baird, Battle Creek and Mill Creek.

An almost continuous precipitation from Saturday to Wednesday raised the San Jacinto rain gauge from 9.06 inches to 10.30 inches.

Joe D. Bibble of Hanford, Tuesday shipped eight carloads of hogs to Los Angeles and San Francisco. The hogs were big fat porkers, averaging 265 pounds.

The price of eggs has been lowered and the Grass Valley Union, with eggstraordinary cackling, remarks that probably this is what the hens have been laying for.

The stock raisers on the foothill ranges about Marysville report that the long cold spell has had the effect of shrinking the cattle and horses running on pasture.

The total rainfall at the Power House of the Ontario Power Company in San Antonio Canyon is 20.37 inches for the season, and at Ninth street Ontario, it is 15.74 inches.

Total precipitation to last night, 14.75 inches, at San Barnardino. Total precipation at Squirrel Inn to yesterday morning at 7 o'clock 35.52 inches, or nearly three times that of last year to this date.

Total rainfall to date at Ukiah, is 15.45 inches. The maximum temperature January 6th, was 41 degrees. The minimum 23 degrees. The same day last year the maximum was 62 and the minimum 31 degrees.

The first biennial report of State Forester G. B. Lull, which has been submitted to the Government in a pamplet of forty pages, reviews the work of the State Board of Forestery since its creation in 1905.

The second annual convention of the Northern California Beekeepers' Association will be held in the Federated Trades Building, Room 1, 1017 J Street, Sacramento California, on the 28th and 29th of January, 1907.

The express shipments from Escondido for the week from the Well Fargo Express Company, were 86 cases or 2580 dozen of eggs, 1850 pounds of chickens, 1260 pounds of cream, 350 pounds of butter and 208 pounds of dressed veal.

The poultry show held at San Diego this year has been the most successful ever held in a financial way as well as other ways. Although not yet figured exactly it has been calculated that the show will have a net profit of $150.

There will be a meeting of the live stock raisers of Riverside county at Hemet, January 26, 1907, for the purpose of organizing a County Live Stock Association, and for the discussion of subjects that are of interest to the live stock industry.

Mr. O. H. Ellis, one of the prosperous and well known ranchers of Talbert, was in the city yesterday on business. Concerning the damage to the celery crop by the recent rains. Mr. Ellis said, that at present a rough estimate of from $75.000 to $100.00 has been placed on the celery loss.

A trainload of forty-six cars of fine celery left Orange county over the Southern Pacific last Saturday, and another of forty-seven cars started east on Monday, just two days later. This is the largest shipment ever made by this association and is probably the largest shipment of celery ever made in the world. Both of these trains are 25 per cent. larger than any shipment previously made.

The rainfall to Thursday morning, by the Southern Pacific gauge at Chico, was 16.07 inches for the season, as against 3.65 last season.

The total precipitation for the season at Highland is 15.06 inches, and at the rate the rain is falling at this writing the mark will reach 16 inches before the night is over.

To supply not only cantaloupes, but also tomatoes, cucumbers and watermelons to the eastern markets, will be the aim of the members of the Brawley Fruit Growers' Association.

The Thermal Cantaloupe Growers' Union has signed a contract with H. Woods for this year's crops, (shipments east of the Rockies) which carries an advance of 50 cents on all standards.

The train of forty-seven cars shipped from the peatlands Monday, contained 7755 crates, which contained 54,285 dozen or over 651,000 bunches of celery. This shipment will bring about $12.000 at the present prices.

The scarcity of hogs is becoming a matter of comment among those engaged in the shipping business in all parts of the State, but no doubt the good prices will stimulate the raising of many more, and cause many to enter the hog raising industry.

Stock hogs have become so scarce about Hanford that N. W. Mammond & Son, have decided to ship in a large number, which will be sold as feeders. They already have 450 east of town on the place owned by John Wetel, and in a few days will ship 1000 more.

El Dorado county has this week experienced the heavest snow-storm known here since the winter 1889-90. Since Saturday night snow has fallen to the following depths in various portions of the county: Placerville, 8 inches; Camino, 18 inches; Pleasant Valley and Grizzly Flat, 2 feet each; Pino Grande, 4 feet.

Thursday after the rain was over we took the measure in our teeth, donned a bathing suit and swam across the railroad track to the gauge and measured up 1.86 for the last shower. This makes a total of 2.96 for the rain of the past week, or 18.70 for the season against 4.84 for last season.—Santa Paula Chronicle.

Tehama county is opening up a new industry in the growing of tobacco. The experiment is to be started at once, and T. H. Ramsey, manager of the Cone ranch will plant an eighth of an acre of the tobacco seed, which will be furnished by J. B. Steward of the United States Department of Agriculture. The experiment will be tried by a number of others, who are anxious for the success of the new industry.

HORTICULTURE.

The season's rainfall in Jackson has been about four inches.

About four inches of snow fell in the vicinity of Vacaville last Sunday, being our first snow storm since the winter of 1902.

About two inches of snow fell in Cement on last Sunday and the hills and country surrounding were white. Since then some of the heaviest winter rains have fallen.

There was few shipments of oranges during last week, owing to the condition of the orchards from the severe rains. Fruit is growing large and inclined to puff and split open.

There was a heavy rainstorm at Salinas and Santa Cruz yesterday moring. The record for the season at the former city is 10.95 inches, while the latter place has had about 3 inches more.

The land office of the Southern Pacific railroad in San Francisco is swamped with applications from parties who are anzious to rent land for the sowing of wheat in the vicinity of Huron and Coalinga.

The storm for the past week amounting to 6.16 inches is somewhat settled bpt indications are for more rain. There was a slight frost for the past two mornings. The rainfal for the season to date amounts to 11.71 inches.—Diunba News.

Three carloads of apples were shipped from Watsonville Saturday night, making a total of 1790 carloads for the season to date.

The farmers north of the Tehachapi, have been greatly retarded in their work of plowing and seedling on account of the long wet spell. There has been but few clear days within the last month sitable for farming.

There was a precipation of .04 of an inch of rain Thursday night at Woodland, making a total of 15.32 inches for the season. The weather clerk is a little uncertain and says the weather will probably be cloudy Saturday.

Following is a tabulated statement of the fruit shipments from the state for the year 1906, in carloads: Cherries 150; Apricots 16; Peaches 584; Plums 1220; Pears 1513; Grapes 2050; Apples (to December 1st.) 669; Miscellaneous 22.

On New Year's day M. P. Kelly, killed the second large hog raised at his La Gloria ranch. It weighed 709 pounds and was three years old. The first one was a little larger, weighing 846 pounds, and was only two years and nine months old.—Gonzales Tribune.

At the annual meeting of the Davis Almond Growers' association at Davisville, the following officers were elected: President, G. K. Swingle; vice-president, G. W. Pierce; secretary and treasurer; J. W. Anderson; executive committee; O. B. Wilbur, Frank Palmer and Eli Snider.

The total shipment of citrus fruits by the Ontario-Cucamonga Fruit Exchange amounts to 172 cars, 95 cars being navel oranges and the balance Valencias and lemons. Considering the weather for the last week, this is indeed a good showing as many ranches are so wet that it is almost impossible to pick the fruit which is ready to be shipped.

E. E. Hendrick, a millionaire of Carbondale, Pennsylvania, has purchased 16,500 acres of land in the Moreno valley, including the Moreno and Alessandro town sites, paying therefor in the neighborhood of a half million of dollars. He will set the land out to oranges, and has planned already for the largest orange grove in America, one of ten thousand acres.

Last Tuesday two carloads of hogs were shipped from the Wheeler-Haldeman-Richard ranch, at Holtville to Los Angeles. They have been shipping right along an average of one or two carloads a month.

Up to 7 o'clock on the 17th, the rainfall at Salinas thus far this season is 12.74 inches, which is only 3 inches less than the total for the whole of last season

The California Citrus Union shipped from Fullerton six carloads of oranges during tthe past week, with a total of 32 for the season; Benchley Fruit Co. shipped three carloads the past week, with a total of 100; the Placentia Orange Growers' Association shipped three carloads the past week, with a total of 12; Thomas Strain, Jr., shipped three carloads the past week, with a total of 11.

The annual meeting of the stockholders of the Southern California Horticultural Society was held January 3 and the following directors were elected for the ensuing year: Walter Raymond, Fred H. Howard, J. G. Morley, Ernest Braunton, E. H. Rust, H. W. O'Melveny and Theodore Payne, and on the 19th the following officers were elected: President, Walter Raymond; V. Pres. J. G. Morley; Secretary, Ernest Braunton; Treasurer, J. Dieterich.

Today's rain record is .12 inch making the total for the season 10.13 inches. This exceeds the average for Riverside for the whole season, according to weather reports, for the past thirty years. Orange shipmentts have almost stopped. owing to the continued wetness, and very little fruit will be picked for shipment until drying weather comes. Fruit men who have studied the market conditions say that this enforced delay in orange shipments is the best thing that could happen to the growers, as prices are almost certain to advance.—Press.

LINERS

Liner Advertising
Advertisements in Liner Column 1½ cents per word. Eight words to a line. No advertisement taken for less than 25 cents.

REAL ESTATE.

CASH FOR YOUR RANCH. SEND FULL description. Will sell if price is right. W. A. COLWELL, 223 West 2d., Room 101. Los Angeles.

TREES.

FOR TRADE.—
WILL TRADE SEEDLING OR GRAFTED walnut trees for, Logan, Phenomenal, Black, Raspberry, or Gardena dewberry plants or 2 or 4 hundred pounds of Northern California native black walnuts for seed.
B. WILLIS BEEDE.
R. F. D. No. 1.
Whittier, Cal.

WASHINGTONIA FILIFERA AND ROBUSTA and Euretia edulis palms, from 5 to 10 feet high, to exchange for other kinds of nursery stock or sold for cash. Give offers. Enough for carload lots. Erickson & Heinz, Brawley, Cal.

FOR SALE—TWO THOUSAND SANTA BARbara Soft Shell Walnuts from 3½ to 8 feet high at 10 to 25 cents each. H. J. Hickson, Route 2, Burbank, Cal.

FOR SALE—THRIFTY YOUNG WALNUT Trees from 5 to 8 feet tall, grown from selected soft shell nuts, $25 per hundred. A. M. Hoel, Goleta, Santa Barbara County, Cal.

BERRIES.

FOR SALE—FIVE THOUSAND MAMMOTH Dewberry Plants will produce 600 crates to the acre. Write for prices to Oak View Berry Farm, Gridley, Cal.

FOR SALE—BURBANK'S PHENOMENAL Berry Plants, true to name, in quantities to suit. For terms apply to E. Thompson, Box 630, Fresno, Cal.

HIMALAYA BLACKBERRY, $1 PER DOZ., $6 per 100: Mammoth Blackberry, Loganberry and Lucretia Dewberry, 50c per dozen, $3 per 100.
ALBERT COOLEY, R. D. 2, Laton, Cal.

WANTED—HIMALAYA BLACKBERRY, McDowd Berry and Longworth Strawberry Plants. Give Price and all particulars. Address Lock Box 64, Gridley, Cal.

VEGETABLES.

CHILEAN WATERMELON SEED.—EXTRA select. No seed from culls. By mail, 4 lbs or less, 75 cents per lb; over 4 lbs, by express 60 cents per lb. S. FAIRBURN, Burbank, Cal.

SEED POTATOES WANTED, EITHER Early Rose or Triumph, by Francis Heinz, Brawley, Cal.

COFFEE.

SPARR'S JAPARA COFFEE-YOU AND YOUR friends are offered an opportunity to buy the finest drinking coffee grown, price 25 cents per lb., packed in 5-lb cans, one dozen in case, 60 lbs., freight prepaid. This is about two-thirds of the usual price charged for ordinary coffee. Send $2.80 for 10-lb. can. Liberal sample sent by mail on receipt of 4 cents postage. F. W. Sparr, 114 East Market St., Los Angeles, Cal.

LOVERS OF GOOD COFFEE—YOUR ATTENtion is respectfully called to the above advertisement. If you enjoy a cup of really good coffee you can buy it from me almost as close as you can buy sugar. Make up an order with your neighbor and write to me. I am a direct importer of Tea and Coffee and can save you money. I ship to all parts of the Pacific Coast and guarantee every pound fresh and pure. Established in Los Angeles ten years. F. W. Sparr, 114 E. Market St., Los Angeles.

POULTRY.

FOR SALE.—100 PURE BRED HOMER PIGeons, all breeders, beautiful birds. M. H. PHILLIPS, Covina, California.

C. ANDREWS, 332 THIRD STREET, LOS ANgeles. Yards, North Southerland Avenue, Hollywood. Partridge Wyandottes. Winners at Los Angeles.

COLUMBIAN WYANDOTTES, THE FANCY and Utility Fowl. Eggs and stock for sale. Eggs from Pen No. 1, headed by First Prize Cock at late Los Angeles show, $5 for 13; No. 2, $3. Also Black Tailed Japanese Bantams, $4 per 13. Frank J. Ironmonger, Hollywood, Cal.

FOR SALE—WHITE WYANDOTTES. SILVER Cup Winners at late show. Choice Stock for sale. Eggs, $2 per setting, $10 per 100. Mrs. Mary Van Brunt, Avery and Benefit Sts., Hollywood, Cal.

FOR SALE—BARRED ROCKS, WINNERS OF 11 prizes and Silver Cup for Best Barred Rock Male at Breeders Show, 1907. Some choice cockerels for sale. Eggs. Write your wants. Frederick Espe, 4425 So. Main St., Los Angeles, Cal.

FOR SALE—FINE, LARGE, VIGOROUS White Plymouth Rock cockerels, $3, $4, $5 and $10 each. FRANK H. THOMAS, 1820 Hobart Blvd. Los Angeles.

SINGLE-COMB WHITE LEGHORNS, FINE white, large, birds; good layers. Hatching and shipping chicks. Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER, Ontario, Cal.

FOR SALE.—PURE BREED STOCK. S. C. White Leghorn Eggs. Large eggs, great layers, eggs for hatching only. $1.50 per 15.

FOR SALE.—EGGS FOR HATCHING. From Buff Leghorns and Barred Plymouth Rock fowls, good color, fine layers. Eggs $1.00 to $1.50 per 15. Wm. C. PARKER No. 111 Pac- $6.00 per hundred. RICHARD POWERS. Anaheim. Cal.
ific Ave. Santa Cruz, Cal..

HOLMBY POULTRY FARM.
Breeder of S. C. Black, Buff and White Orpington, Barred Rocks, S. C. White Leghonrs, Pekin Ducks, Mammoth Bronze Turkeys, Tumblers and Homer Pigeons, 130 Prenuims won at 4 shows. stock and eggs for sale,—write your wants. ARTHER LETTS Prop., WILL PURDY, Manager, Hollywood, California.

SPECIAL NOTICE.—TO RANCHERS AND Poultrymen. We have just issued a catalog on Poultry Supplies and Seeds that every one should have. It is free for the asking. S. H. Church, 505 South Main street, Los Angeles.

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

Buy the World's Famous Egg Food No. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the **Gold Medal** at the St. Louis World's Fair for greatest batch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be isued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. FILCHER, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

Petaluma Incubator Co.

Main Offices and Factory, Petaluma, Cal., Box F.
Los Angeles, 505 South Main Street.
San Francisco Office and Salesroom, 33 Market St.

Beef Scraps

GUARANTEED ANALYSIS :

Protein.....65%
Fat..... 8%

Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

Raw Bone

GUARANTEED ANALYSIS :

Protein.....25%
Phosphates.....45%

Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods

WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

WHITE MINORCAS

Won at Alameda Poultry Association Show, 1907: 1st Cock, 1st Hen, 1st Pullet

EGGS FOR SALE—$2.50 per Setting of 15; Two Settings, $4.50; Incubator Lots $10 per 100.

A Few Cockerels For Sale. Prices on application to

Coulson Poultry and Stock Food Company
Petaluma, California

S. C. White Leghorn Eggs

For Hatching, from Captain Mitchell's Strain.
Large Birds. Prolific Layers. Large White Eggs.
Order Books Open for 1907 Season.

The Lincoln Avenue Poultry Yards

Carl C. Curtis, Owner, Pasadena, Cal.
Successor to Captain E. Pryce Mitchell

Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

HELPS AND HINDRANCES IN GETTING EGGS.

"I wish I had some eggs," said a neighbor just before Christmas "to take to a friend in the hospital." "Don't your hens lay?" "No, we have about seventy hens and are only getting one egg or half an egg a day, but we are better off than our neighbor, he has seven hundred hens and is only getting ten eggs a day."

"I will give you some eggs for your sick friend," said I. "How many are you getting and how many hens have you?" "I have fifteen pullets" was my reply and we are getting six or eight eggs a day, we had nine yesterday." "How do you do it?"

This little conversation keeps recurring to me. It is the "knowing how" and the "doing it" the same old story. We all want to get eggs both in season and out of season, and this month past my letter box has contained too many appeals for help "will you tell me why my hens don't lay?" Shall we today chat on helps and hindrances in getting eggs?

In most cases it is the poultry keepers own fault that their young pullets are not laying well, that they are in the backward condition in which they now find them. In many cases it has been caused by neglect and under feeding just at the time when the birds required the best of care and the most ample rations, but were prevented from receiving the same by the caretaker being occupied by something else, which at the time seem to need more attention, or because he (or she) was away behind in work and was oblodged to neglect something.

It sometimes happens, as the veteran poultryman and editor Mr. A. F. Hunter, has said, that to use an expression more plain than polite "they have bitten off more than they can chew." These good people who are now lacking in eggs, have tried to do more business than they could properly attend to, with the result that they neglected those important little details, which in the poultry business make all the difference between profit and loss.

Is not this very often true with the majority of us? Do we not often plan and lay out more than we can accomplish and then, when things crowd, we let something go and think it will be all right in the end? I think that most of the people who are now complaining that their pullets are not laying as they should, can if they would, look back and remember sometime when the pullets were stinted for a few days in food or were neglected in the matter of shade, or kept in an unsanitary condition, or in lousy henneries because their owners were too busy attending to something else, and they did not think a little neglect would matter much, or some may even have forgot that time now, but the pullets have not forgotten it and we are paying up now, reaping as we sowed in the summer time.

But confessing that some of us have been guilty of stunting the growth and maturity of the pullets at a time when we though we could not prevent it, what shall we do now?

Now we want eggs not only for the market and for our own table, but also for hatching. Early hatched pullets, if properly cared for, should all be laying and those that are not laying, those that for any reason are stunted, should be fattened and killed for the market. A pullet once stunted will never make an extra good layer.

The poultry keeper's advice is weed out the culls, don't give the benefit of the doubt to anything that looks as if it might pick up bye and bye and do something." Sell or eat the poor ones and keep the good ones or none at all. Twenty five good pullets will make more money and give the owner more solid satisfaction than two hundred of the stunted variety. "Dont bite off more than you can chew,' may be translated in the poultry yard to mean "don't keep anything that is not A. 1."

Sometimes it happens that when pullets are well grown, not stunted in anyway, they seem to hesitate about laying, and I have had people ask me if there is any danger of their overfeeding the pullets. There is no danger of too liberal a feeding of pullets; you may feed a wrongly balanced ration, but not a too liberal quantity. In fact it is necessary to feed with great liberality because at this time the pullet has three drains upon her vitality,—she is growing in size, she is adding to her winter coat of feathers, and she is forming the bunch of eggs in the ovaries. A pullet needs an ample supply of food for all this, and if underfed at this time something will have to wait, and that something will be the eggs or if not the eggs it will be the size, and that will mean in the end a poor layer, for undersized hens are poor layers.

If your pullets are well grown and healthy and yet are not laying, give them a little more animal food. They require a stimulus, a slight shock of some kind to start the eggs to moving. Some extra meat will usually do it, or try "grandmother's" plan and give one teaspoonful of red pepper three times a week, for a dozen fowls in the mash, and give all the milk you can spare. Mr. Fox says, "given milk and red pepper any hen will lay in winter." Red pepper is the stimulant in all the "condition powders" or "egg foods." It is a stimulant and can be used successfully to start the pullets laying, but should only be continued for a short time, and should not be used for breeding hens, as it will induce infertility .

For breeding stock it is considered best to keep hens that are over a year old as chickens from them are found to be more vigorous than from younger birds. However a well grown, vigorous pullet that lays good sized eggs, eggs as large as an older hen, will have, if properly fed, vigorous chicks.

The feeding for fertility must always be kept in mind. In this we must consult nature, and she tells us that in the spring time, when fertility is the important thing, she feeds more annual food and more green food than at any other time. If you imitate nature you will have healthy thrifty hens and strong fertility in the eggs.

ALAMEDA POULTRY SHOW.

The Third Annual Exhibition of the Alameda County Poultry Association, held at Idora Park, Oakland, from January 7—13, met with a good attendance and the exhibitors were well pleased. The total number of birds shown being between 700 and 800, many of them in the best possible condition scoring close to the 100 mark. The judges were R. J. Venn, Fresno, C. G. Hines, Alameda, Vincent Huntly, Petaluma, and David Larson, Turlock.

Among the prominent breeders of Northern California, carring away the ribbons, cash prizes, and silver trophies were:

Mrs. Florence E. Bemis, of Oakland, winning 25 ribbons and 3 silver cups, with her famous strain of White and Barred Plymouth Rocks. Mrs F. M. Newbert, of Sacramento, showed white Leghorns and Light Brahmas, having the highest scored birds in the show. S. C. White, Leghorn pullets, scoring 96 points, winning the Ivory Soap Silver Cup.

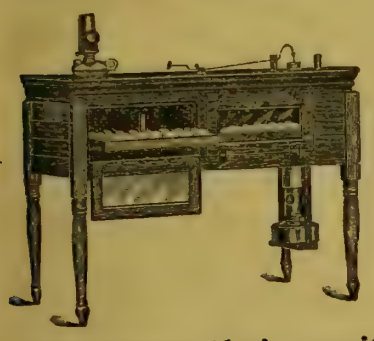
Miss C. B. Carrington, of Haywards, with S. C. White Leghorns, carried away many of the prizes.

G. H. Popperwell, of Stockton, showed Barred Plymouth Rocks White Leghorns, and Black Minorcas, winning ten ribbons.

Serutton and Huntly of Petaluma, with a special showing of Aylesbury Ducks. These ducks attracted much attention among the duck fanciers, owing to their size, weighing from 10 to 12 pounds, winning the Silver Cup for ducks. Among them were some of the direct importation, having been brought to this country a short time ago by Mr. Serutton, at a great cost.

The Coulson Poultry and Stock Food company, had a fine showing of White Minorcas, winning 8 ribbons, a good showing for their first exhibition of these birds. They also had a fine exhibit of their foods, which attracted much attention as they made

The "Chatham" Incubators and Brooders



are sold on their merits only—you be the judge

84 days free trial Take off 4 hatches

to prove that the Chatham is the machine you want, then if not satisfactory it costs you nothing.

I want every reader to send for my free catalogue, telling all about this machine, and why "Women Succeed," "Profits in Poultry," "Broiler Raising," "Ducks for Market," "Which Hens to Keep," "About Turkeys," "To the Farmers," — a book of good useful information, and practical. Send a postal card with your name and address and this book will be mailed you free.

GEO. W. FOOTT,
321 East Morrison St. Portland, Oregon

Spargur's Trap-Nested White Leghorns

Eggs from 200-Egg Hens, $1.50 per 15, $6.00 per 100

From Second Best Pens, $1.00 per 15, $5.00 per 100

Indian Runner Duck Eggs $1.00 per 13, $5.00 per 100

H. G. Spargur - Soquel, Cal.

SHADE'S Select Yards of Ten Hens with egg record of 234½, $3.00 per 13. All other yards at $1.50 per 15. All yards above 184. Incubator lots $8.00 per hundred. A neat little folder sent on request.

The Little Gem Automatic Feeder, $1.25.

SHADE'S RHODE ISLAND RED FARM
123 E. Eleventh St., San Bernardino, Cal.

WHITE ROCKS

Fine large vigorous farm-raised stock. Bred for utility and fancy points. Eggs, 15 for $1.50, $6.00 per 100. Call and see our stock and you will leave your order, for that is the way that all lovers of Fine White Rocks do that come to the White Plymouth Rock Ranch, J.T.Davis,Prop., Pomona, Cal.

Ross & Tate, Altadena, California

Breeders and Importers of

Buff, Black, and White Orpingtons

Have for sale Trios, Cockerels and Pullets. Eggs for hatching, settings or hundreds. Write or call,

Two Blocks North, One Block East Altadena Post Office

S.C.Wh. Leghorns and I. R. Ducks

Eggs, $1.50 per setting, $6.00 per 100. Send for Illustrated Catalogue.

JOHN P. BODEN 638 Second Street Watsonville, Cal.

ENVELOPES

SEND $2 for 1000 printed corner-card business envelopes. Quick delivery. $1.25 for 1000 business cards.

W. P. REYNOLDS & CO.,
Envelopes, Paper Boxes, Shipping Tags,
444 S. Broadway, Los Angeles

C. J. Ferris

BREEDER OF THE FAMOUS

Buff Plymouth Rocks

Winners of Five Prizes at the late Los Angeles show, the largest show ever held on the coast. A few choice cockerels for sale. Eggs, $2 and $3 per 13. Write your wants.

San Gabriel, California

MY EXHIBIT OF

WHITE, PARTRIDGE AND BUFF WYANDOTTES

Won 26 Ribbons and Special Prizes at the Poultry Breeders' Show, 1907

L. E. Berkey
R. F. D., Box D87 Fullerton, Cal.

a special feature of explaining the different foods, and how they should be fed, also explaining the care used in the manufacture in order to produce good goods. They are also agents for the Farmers Jubilee Incubators.

Another attraction was the Cyphers Incubator Co's. exhibit of incubators, showing several hatches of chicks, which were fine and healthy.

Charles Weeks of Mountain View, showed his new portable open air poultry house, and out side brooder, which proved to be of interest to many breeders.

Awards.

The following is a list of winners:

Barred Plymouth Rocks.—Mrs. F. E. Bemis, 1st, 3rd, 4th, cock; 2 hen; 2nd, 3rd cockerel; 4th, pullet, 3rd pen; 1st collection. J. C. Naylor, 2 cock; 1st, 3rd, 5th, hen; 1st, 4th, 5th, cockerel:, 1st, 2nd, 3rd, pullet; 1st pen, 2 collection. A. Norton, 5th, cock. Geo. W. Poppelwell, 4th hen; 3rd pen.

White Plymouth Rocks.—Mrs. F. E. Bemis, 1st cock; 3rd, 5th, hen; 1st 2nd, 4th, 5th, cockerel; 2nd, 3rd, pullet; 1st, 2nd, pen; 1st collection. C. D. Postel, 2nd cock; 3rd cockerel. C. G. Hinds, 3rd, cock; 1st hen. Fred E. Sperks, 4th, cock; 4th, hen. F. B. Van Nostrand, 5th cock; 3rd pen; 2nd, collection. Paul D. Culver, 2nd, hen; 1st, pullet. D. A. Cohen, 4th, pen. E. Young, 4th, 5th, pullet. H. V. Wilcutt, 5th, pen.

Buff Plymouth Rocks.—Chas. M. Brink, 1st, 2nd, cockerel; 1st, 2nd, 3rd, pullet.

Silver Laced Wyandottes.—E. A. Willing, 1st, pullet.

Golden Laced Wyandottes.—J. P. English, 1st, 2nd, hen; 1st, 2nd, 3rd, cockerel; 1st, 2nd, 3rd, pullet; 1st pen.

White Wyandottes.—J. W. Morressey. 4th, cockerel; 1st, 2nd, 3rd, pullet, 1st, collection, 2nd, pen. Mrs. Buergermeister, 1st, cock; 3rd, hen; 5th, pullet. J. Stansfield, 2nd, 4th, 5th, hen; 1st cockerel; 4th, pullet, 1st, 4th, pen. Frank Robertson, 3rd, cock. J. K. Bigelow, 5th, hen; 2nd, 5th, cockerel; 3rd, 5th, pen. John A. Evans, 3rd, cockerel,

Buff Wyandottes.—Wm. J. Fox, 1st, cock; 1st, cockerel, 1st, 2nd, 3rd, pullet.

Silver Penciled Wyandottes.—Mrs. Geo. M. Grindell, 1st, 2nd, cockerel; 1st, 2nd, 3rd, 4th, 5th, pullet; 1st, pen.

R. C. Rhode Island Reds.—E. K. Healey, 1st, cock; 1st, 2nd, 3rd, hen; 1st, pullet.

S. Rhode Island Reds. J. H. Crow, 1st, cock; 1st, 3rd, hen; 1st, cockerel; 1st, 2nd 3rd pullet. Walter Martin, 1st, cock. Athens Loft and Poultry Farm, 2nd, 4th, 5th, hen.

S. S. Hamburgs.—W. J. Head, 1 Hen, 1 Cockerel, 1, 2 Pullet.

Light Brahmas.—F. E. Mason, 1, 2, 3, 5 Cock, 2, 3, 4 Hen, 1 Cockerel, 1 Pullet, 1, 2 Pen. F. M. Newbert 4 Cock, 1, 5 Hen. Mrs. E. F. Reed, 2, 3, 4 Cockerel.

Buff Cochins.—H. V. Carter, 2 Cock, 2, 3, 4, 5 Hen, 3 Cockerel, 1st Collection, 1 Pen. Thos. Steel, 1 Cock, 2 Cockerel 1, 4 Pullet. Jas. M. Smith, 1 Hen, 1 Cockerel. 2, 3 Pullet. C. H. Wise, 5 Pullet.

Partridge Cochins.—D. A. Cohen, 1, 2, 3 Hen, 1 Cockerel, 1, 2 Pullet, 1 Pen.

Black Langshans.—D. A. Cohen, 1, 2 Hen, 1 Cockerel.

S. C. Brown Leghorns.—G. H. Colby, 1 Cock. Hillcrest Poultry Yards, 2 Cock, 2, 4 Hen, 1 Cockerel. F. R. Hamilton, 3, 4, 5 Cock, 1, 3 Hen, 2 Cockerel, 1 Pullet 1 Collection. H. H. Holland 4 Cockerel. Crawford Bros., 3 Cockerel, 2 Pullet.

S. C. White Leghorns.—F. M. Newbert, 1 Cock, 2 Cockerel, 1 Pullet, 2 Pen. C. B. Carrington, 2 Cock, 2 Pullet, 4 Pen, 2 Collection. E. A. Willing, 3 Cock. Mrs. L. B. Rhoades, 4 Cock, 4 Hen, 3, 5 Pullet, 3, 5, Pen, 1 Collection. G. H. Colby, 1, 5 Hen, 1, 3, 4, 5 Cockerel, 4 Pullet 1 Pen, Silver Cup for best collection in Mediteranean class. G. H. Poppelwell, 2, 3 Hen. Mrs. E. F. Reed, 5 Cock. C. J. Oberst, 1 Cock, 1, 2 Hen, 1, 2 Cockerel 1, 2 Pullet, 1 Pen.

S. C. Buff Leghorns.—M. B. Kelley & Son, 1, 2 Cock, 2, 3 Hen, 1, 2, 3 Cockerel, 2, 3, 4, 5 Pullet, 1 Pen. D. A. Cohen, 3 Cock, 1 Hen, 4, 5 Cockerel, 1 Pullet.

Black Minorcas.—Geo. W. Popelwell, 1, 2, 5 Cock, 2 Hen, 1, 2 Cockerel, 1 Collection. 1 Pullet. J. Stansfield, 3 Cock, 1 Hen, 2 Pen. H. H. Holland,

Emery's Pure Meat Meal

Ask nearest dealer for them, and take no imitations
Write for our free booklet, "Farmers Friend"
Valuable to all farmers and ranchers,

Don't believe all we say, but just enough to buy our Poultry Foods.

Emery's "B. B.& B."

The Pacific Guano and Fertilizer Co. San Francisco
Successors to M. Ohlandt & Co.

El Oro Poultry Farm

Produces birds which show their worth as layers and as

Winners of Ribbons

At the Fresno Show this year they won :

Brown Leghorns—1st Cock, 1st Cockerel, 1st and 2nd Hen, 1st and 2nd Pullet. 1st Pen.

Buff Rocks—3rd Cockerel, 4th Hen.

Black Minorcas—1st and 2nd Cock, 2nd and 4th Hen.

Buff Cochin Bantams—1st Hen, 1st Cock.

Blue Andalusians—1st Pen, 1st, 2nd, 3rd and 4th Hen, 1st Cock, 1st and 2nd Cockerel, 1st Pullet.

Bronze Turkeys—4th Hen, 4th Gobbler.

Buff Orpingtons—3rd Cock, 5th Hen, 4th Pullet.

Besides these, El Oro Birds won the Bankers' Cup for the greatest number of points of any one breeder, with 66 points; Special for Best Mediterraneans. Besides that, in another special these birds literally

Took the Cake

Eggs, $1 to $3 per Setting. Stock, $1 to $5 Each

El Oro Poultry Farm Fresno California

BEMIS BARRED AND WHITE PLYMOUTH ROCKS

PRIZES WON At Alameda County Poultry Association Show, Oakland:

21 Regular Prizes.

4 out of the 5 Specials given by the American White Plymouth Rock Club.

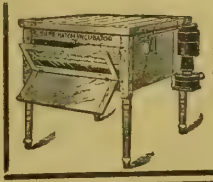
Silver Cup for the ***best collection*** in American Class.

Silver Cup for ***best display*** in American Class.

Hines Silver Cup for 10 Best White Plymouth Rocks in Show.

I am able to ***furnish*** the ***best*** birds and eggs at moderate prices. I cannot furnish large lots for incubators.

MRS. FLORENCE E. BEMIS, 1757 NINETEENTH AVE., OAKLAND, CAL.



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Are known the world over for their ***Simplicity*** and ***Reliability***. It is useless to place in the hands of a novice a machine that would puzzle a scientist. That is what we do not do. We guarantee them for five years, and positively stand by the guarantee. Send for free catalogue No. 25. It is full of poultry matter.

Doke Stock Food Co.

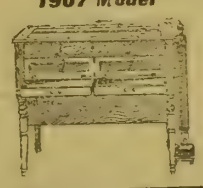
711 South Main St. - - - Los Angeles, Cal.

The White Faced Black Spanish

Are famous as layers of large white eggs at all seasons of the year. We won all prizes at the Breeders Great Show, 1907. **Choice Cockerels For Sale, $5. Eggs, $1.50 per 13, $4 50 per 50, $8 per 100.** Special matings, $3 per 13. Fertility guaranteed.

Mrs. W. H. O'Connor Lock Box 112, Dolgeville, Cal.

1907 Model



The Stockton Incubator

Is now manufactured under new management and is in every way put up as a first-class machine. Our 1907 model is a perfect working incubator, low in price, economical to run and gives a fine hatch.

Winner of silver medal at Pan-American, also medal at California State Fair. Write for circular and information.

Stockton Incubator Company

G. S. Marshall, Prop. *Stockton, Cal*

Chicks Just Hatched

We ship them everywhere. Pure Bred White Leghorn Chicks from the Best Egg Producers in the United States

MAXWELL, MAY 27, 1906.

CALIFORNIA INCUBATOR CO.,

Gentlemen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come so far and being so long on the way without the loss of a single one, but it is an undisputed fact that such was the case. We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. CAMPBELL.

CALIFORNIA INCUBATOR CO., 907 Washington St., Petaluma, Cal.

White and Buff Wyandottes

Prize-Winning, Egg-Laying, Wealth-Producing Strain.

M. E. DILLINGHAM, 1107 San Gabriel, Cal.

Single Comb White Leghorns Exclusively

Eggs for Hatching, $1.00 per 13, $5.00 per 100. High Fertility Guaranteed. Phone Park 682.

J. E. Roadle, 901 St. Louis St., Los Angeles, Cal.

White Wyandottes

Hubbard Stock

Heavy Laying, Prize Winning Strain. Eggs, $2 for 15; Baby Chicks, 20 cents each.

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2851 Morgan Ave.
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Take Slauson Ave. car to 29th St., walk 1 block west

WHITE WYANDOTTES

The broad, low, blocky type; the stay-white kind, with heavy egg records. Won 4 and 5 pen at the largest show ever held west of Chicago on two entries. Eggs, $2.50 per.

MRS. S. H. CHURCH,
505 S. Main St. Los Angeles.
1136 West 38th. St.

CHANTICLEER HALL

BARRED PLYMOUTH ROCKS AND BRONZE TURKEYS.

Win once again at the great Los Angeles County Poultry Association show 1907. For full account of winnings, for choice stock or eggs and a square deal write to

LOUIS D. HADLEY, SAN GABRIEL, CAL.

S. S. Wallace & Co.
WHOLESALE
Produce and Seed Merchants

Consignments Solicited.

Seed Potatoes and Beans. We exercise the greatest care to have the seeds pure and reliable.

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Weed Process **COMB FOUNDATION**
—AND—
BEEKEEPERS' SUPPLIES

Wax exchanged for foundation or bought for cash

H. J. Mercer
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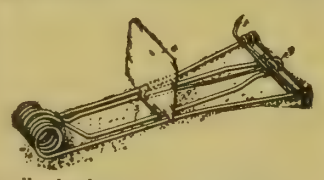
MACABEE GOPHER TRAP



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Z. A. MACABEE, LOS GATOS, CAL.

A NOTED SALE OF WHITE P. ROCKS.

Not for years has there been so much talk among poultry men in this part of the State as when the announcement was made that Mr. A. J. Little had bought from Mr. Humphrey's, his entire flock of White Plymouth Rocks. It is a well known fact that Mr. Humphrey's yards contained the best White Plymouth Rocks in the State, that he was not only a fancier, but a breeder. When we look at his birds now and see the improvement he has made in a few years, we want to give him the name of "Wm. Conqueror." Mr. Humphry is a man who enjoys meeting obstacles, and overcoming them. He not only met and defeatd his rivals in the show, but worked to overcome the faults of the breed, to which he gave so much time and study.

Mr. Little is also a fancier, and has a love for his birds, and we believe if any one thing, more than any other, figured in the sale as a consideration, is the fact that he is capable of taking up the work where Mr. Humphrey left it, and carying it on, perfecting the breed and bringing it to a still higher standard.

Mr. Little has plenty room for a large poultry ranch, and we believe by devoting his undivided attention to one variety, he can do for California what U. R. Fishel has done for Indiana.

Some six or eight weeks ago, Mr. Humphry met with a severe accident in a runaway, and since that time has been unable to care for his birds. This we understand is his reason for selling out. He says that he is not out of the fancy for good, but that he still wishes to be identified with the industry.

Good as has been the season of 1906 for sugar making at Chino, the coming year promises still better, for a larger area than ever is contracted for. Every-thing is in fine condition and a bigger crop is expected than last year. The increase in production here is expected to be not less than a ton an acre.

4 Cock, 4 Hen. D. A. Cohen, 3 Hen, 3 Cockerel, 2 Pullet, 1 Pen.

S. C. White Minorcas.—Colson P & S. F. Co., 1, 3 Cock, 1, 4 Hen, 2, 4 Cockerel, 1, 3 Pullet. R. C. Ogilvie, 2 Cock, 2, 3, 5 Hen, 5 Cockerel, 4, 5 Pullet, 1 Pen, 1 Collection. L. V. Peterson, 3 Cockerel, 2 Pullet.

Andalusians.—L. A. Wilson, 1 Cock, 2, 3 Hen, 2, 3 Cockerel, 1, 2, 3, 4 Pullet, 1 Pen. H. H. Holland, 2 Cock, 1, 4 Hen.

Anconas.— C. B. Bergen, 1, 2 Cockerel, 1, 2, 3, 4 Pullet.

Buff Orpingtons.—Linden Bros., 1 Cock, 2, Cockerel. H. W. Gessner, 2 Cock, 5 Pullet. Jesse Martin, 1, 2, 3, 4 Pullet, 3 Cockerel, 2 Pen. F. E. Sparks, 4 Cock. F. B. Van Nostrand, 1, 2, 3 Hen, 1, 5 Cockerel, 1 Pen, 1 Collection, 3 Cock. W. T. Frost, 5 Cock, 4, 5 Hen. R. W. Hitchcock, 4 Cockerel. H. W. Gessener, 5 Pullet.

W. C. Black Polish.—F. E. Mason, 1 Cock, 1, 3, 4 Hen, 1 Cockerel, 1 Pullet, 1 Pen, 1 Collection. F. E. Sparks, 2, 5 Hen.

G. S. Hamburgs.—C. J. Seigfried, 1, 2 Cock, 1, 2, 3, 4, 5 Hen, 1 Cockerel, 1, 2, 3 Pullet, 1 Collection, 1 Pen.

Cornish Indian Games.—W. K. King, 1, 2 Cock, 2, 4 Hen, 1, 2, 3, 4 Pullet, 1 Cock. Hillcrest Poultry Yards, 1, 3 Hen, 5 Pullet.

G. Sebright Bantams.—E. Young, 2 Hen, 1 Cockerel, 1 Pullet.

F. E. Mason, 1 Cock, 1, 2, 3, 4, 5

S. Sebright Bantams.—F. E. Mason, 1, 2 Cock, 1, 2, 3, 4 Hen.

Buff Cochin Bantams.—H. H. Holland, 1 Cock, 2 Hen. John A. Evans, 1 Hen. Miss Margaret Stansfield, 1, 2 Cockerel, 1 Pullet.

Japanese Bantams.—Alice M. Agden, 1, 2 Cock, 1, 2, 3 Hen.

S. C. White Orpingtons.—N. K. Eldred, 1 Cock, 1 Hen, 1 Cockerel, 1, 2, 3, 4, 5 Pullet, 1 Pen, 1 Collection. C. E. Macrum, 2 Cockerel, 2 Pen.

S. C. Black Orpingtons.—H. W. Gessener, 1 Cock, 1 Hen, 1, 2 Cockerel, 1, 2 Pullet.

Silver Penciled Pdymouth Rocks.—R. L. Apple, 1, 2 Cock, 1, 2, 3, 4 Hen. Walter Martin, 1 Pullet.

Jungle Fowl.—Walter Martin, 1 Cock.

Bronze Turkeys.—D. A. Cohen, 1 Cock, 1, 2, 3 Hen, 1 Yearling Cock, 1, 2 Cockerel, 1 Pullet, 1 Collection, 1 Pen.

Buff Turkeys.—D. A. Cohen, 1 Cock, 1, 2, Hen, 1 Yearling Cock, 1 Cockerel, 1, 2 Pullet, 1 Pen, 1 Collection.

Pekin Ducks.—H. H. Holland, 1 Old Drake. R. W. Hitchcock, 1, 2 Young Duck.

Aylesbury Ducks.—Scraton Huntley, 1 Young Drake, 1, 2 Young Duck, 1, 2 Old Drake, 1, 2 Old Duck.

Rouen Ducks.—J. J. Rogers, 1, 2 Young Drake, 1 Young Duck, 1 Old Duck.

Buff Orpington Ducks.—Mrs. M. E. Plow, 1 Young Drake, 1 Old Duck.

White Indian Runner Ducks.—R. W. Hitchcock, 1 Young Drake.

Indian Runner Ducks.—R. W. Hitchcock, 1 Old Drake, 4 Old Duck, 1, 3 Young Drake, 3, 5 Young Drake, 3, 5 Young Duck, 1 Callection. Mrs. Plaw, 2 Old Drake, 1, 2, 3 Old Duck, 2, 4, 5 Young Drake, 1, 2, 4 Young Drake, 1, 2, 4 Young Duck.

Pearl Guineas.—D. A. Cohen, 1 Cock, 1 Hen, 1 Cockerel, 1, 2, 3, 4 Pullet, 1 Collection.

HONOLULU POULTRY SHOW.

During the third week in December, Honolulu held a poultry show, which created a great deal of interest in and about the city and proved in every way satisfactory to those in charge

The exhibit comprised the following numbers and varieties; the number representing the number of coops:

Fifty-seven barred Plymouth Rocks, thirteen white ditto, one silver laced Wyandotte, five white ditto, three buff ditto, four Columbian ditto, three Rhode Island reds, six light Brahmas, one cock weighing 13 1-4 pounds, the standard weight being twelve pounds, one dark Brahma, seven buff Cochins, two Cochin Partridge, two black Langshan, five brown leghorn, nineteen white ditto, three buff ditto, nine black Minorca, four ditto, one blue Andalusian, five silver laced Dorkings, four buff Orpingtons, four black ditto, two black game, two Cornish Indian, two Pit Game, two Japanese Game, one American Game, one Toulouse geese, one white turkey, two bronze ditto, three Pekin ducks, one Muscovy duck, one bantam and many of pigeons.

The man who wants to drown his trouble never takes it to a millpond.

6 Firsts and 2 Second Prizes and 2 Specials at San Jose with 10 Entries is Our First Achievement This Season

FOR SALE—400 Black Minorca Pullets and 1-year-old Hens.
100 White Leghorn Pullets and Hens.

Black Minorcas, Buff Orpingtons, S. Duckwing Leghorns — Won last season 6 firsts and 6 second prizes with 14 entries — Blue Andalusians, Black B. Red Ga, White Leghorns

Hollingworth Poultry Yards

Santa Cruz, California

200-250 Egg Fowls | **WHITE WYANDOTTES** | Unsurpassed Show Record

Hatchable ***EGGS*** from ***mature,*** standard-bred, ***heavy laying*** fowls is our specialty. Clear eggs replaced. Eggs for ***settings,*** by the ***100*** or by the ***1000,*** from show matings and utility matings. ***Bargains*** in ***Stock.*** Write for our ***new*** catalogue.

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Incubators? ***Baby Chicks?***

Must Hatch Incubators

Hatch all the fertile eggs and produce vigorous, healthy chicks—two factors that count in the poultry busiuess. We operate the most extensive manufacturing and poultry plant on the coast, and guarantee all our products. If you are in need of anything for the poultry business, write for our illustrated catalogue "B" We have the largest hatcheries in the world, and furnish the best S. C. White Leghorns it is possible to produce.

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BLACK MINORCAS
EXCLUSIVELY

Winnings at the great Los Angeles Show, January 1 to 5, 1907:

COCKS—First and Third. **COCKERELS**—First, Second and Th
HENS—First, Second, Third, Fourth, Fifth
PULLETS—First, Second, Third, Fourth, Fifth
PENS—First and Second
CUP for Best Minorca Male, also **PRESIDENT'S CUP**

EGGS FOR SALE

PERHAM & WHEELER

Successors to Geo. R. Albers — R. F. D. 123, Lordsburg, Ca

Columbian Wyandottes

Winners at Breeders Great Show, 1907

COCKS, 2nd, 3rd and 5th; HENS, 1st, 2nd, 5th; COCKERELS, 2nd, 4th and 5th; PULLET, 1st, 2nd and 4th; PEN, 2nd. Club's Special Cup for best male and female; 5 Special Ribbons; also Special Ribbon for best COLORED female; Ribbon for best shaped female. Stock and Eggs in any quantity. Eggs, $3 and $5 per 15, $20 per 100.

ED. M. BURNELL, South Pasadena, Cal.

Black Tailed Japanese Bantams

Winners of 3 Silver Cups at late Los Angeles Show, also 1st Cock, 3rd and 4th Hen, 1st and 2nd Cockerel, 1st, 2nd, 3rd and 4th Pullets; 1st and 2nd Pen. Eggs for hatching, stock for sale

LeRoy B. Burnell, South Pasadena, Cal.

Willard Poultry Farm
Hynes, Cal.

WHITE WYANDOTTES WHITE MINORCAS
INDIAN RUNNER DUCKS

Winners at late Los Angeles Shows. White Minorca and White Wyandotte eggs, 1st pen, $3; 2nd pen, $2 per 15. Duck eggs, $2 per 13.

Mrs. Hungerford, Mgr., Hynes, Cal.

Buff Wyandottes

The Best Flock of Buffs on the Coast. Have been carefully line bred for five years. Won more premiums than all competitors combined this year. Eggs $2.50 and $4. Silver cup for best display

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San Jacinto, Cal.

O. K. Trap Nests Shows the hen that lays the eggs and keeps her from eating or breaking it after it is laid.

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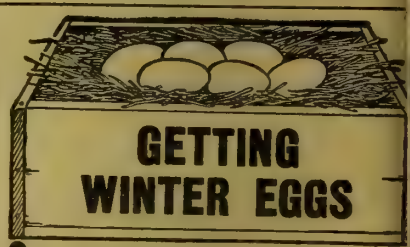
Box B **Ontario, Cal.**



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The greatest profit from hens is in making yours lay when the other fellow's don't—an easy thing to do when each morning's feed contains a small portion of Dr. Hess Poultry Pan-a-ce-a. This tonic preparation also cures gapes, cholera, roup, indigestion, etc.

DR. HESS
Poultry PAN-A-CE-A

is a wonderful assistant to hen nature. By its use, functions and organs, which in confinement become dormant or inactive, are **compelled** in an easy and natural manner to act as nature intended. This is why Dr. Hess Poultry Pan-a-ce-a fills the egg basket in winter. It is the prescription of Dr. Hess (M. D., D.V. S.), and is endorsed by leading poultry associations in United States and Canada. **It costs but a penny a day for 30 fowls, and is sold on a written guarantee.**

1½ lb. package, 35c. 12 lbs. $1.75
5 lbs. 85c. 25-lb. pail, $3.50

Send 2 cents for Dr. Hess 48-page Poultry Book, free.

DR. HESS & CLARK, Ashland, Ohio.
Instant Louse Killer Kills Lice.
THE PETALUMA INCUBATOR CO., PETALUMA, CALIFORNIA, Pacific Coast Distributors.

The Ornamental Garden

By ERNEST BRAUNTON

Common Names

MUCH AS may be said in favor of having common names for plants, it cannot be disputed hat to be intelligible the world over, he scientific appellation is the only e to be recognized when buying or lling. To latinize the names of varies appears uncalled for often, and t in the commerce of the world it sists trade to have even these. Plant collectors unacquainted with e botanical names of plants are a ague to the nurseryman. Take the se of cedar for instance; depending which part of the country the colctor is in, all the folowing trees e called cedar—Chamaecyparis ujoides, Libocedrus decurrens, Thuja cidentalis, Cupressus Lawsoniana d all the many juniperus, while red dar is Puniperus virginiana. From llectors unacquainted with scientific mes it is impossible to know what ill be received under a common me, unless one is well acquainted ith the trees that grow with them. ere is nothing better to do than for talogue makers to stand by scientific mes. When these are rightly adopt I there is no fear of being misunrstood, both buyer and seller know hat they are doing, and trade is ade easier for all concerned.

GRASS.

Gather a single blade of grass, and camine for a minute, quietly, its narow, sword-shaped strip of fluted reen. Nothing, as it seems, there notable goodness or beauty. A very ttle tallness, and a very little rength, and a few delicate, long nes meeting in a point—not a perct point, either, but blunt and unished—by no means a creditable or pparently much-cared-for example of ature's workmanship; made only to trodden on today, and tomorrow to cast into the oven; and a little, ale and hollow stalk, feeble and flacd, leading down to the dull brown bers of roots. And yet, think of it ell and judge whether, of all the orgeous flowers that beam in summer ir, and of all strong and goodly trees stately palm and pine, strong ash nd oak, scented citron and burdend vine—there be any by man so eeply loved, by God so highly graced, s that narrow point of feeble green. nd well does it fill its mission; conider what we owe merely to the meaow grass, to the covering of the dark round by that glorious enamel, by he companies of those soft and countess and peaceful spears.. * * * ll spring and summer is in them—he walks by silent scented paths—he rests in noonday heats—the joy f herds and flocks—the power of all hepherd life and meditation—the life f sunlight upon the world, falling in merald streaks, and falling in soft lue shadows, where else it would ave struck upon the dark mold or corching dust.—John Ruskin.

NATIVE ORNAMENTAL PLANTS

It is not necessary to repeat here he instructions for transplanting dorant plants. Most people who have eached maturity have had some exerience, and those who have not may nd instructions in nearly any book n agriculture or horticulture, or even n some nurserymen's catalogues. To void difficulties, it is recommended hat the would-be gardener notice arefully the native plants of his reion during the growing season, makng particular note of the horticultural ossibilities and habits of each, and t the same time examining each with sufficient care to be able to recognize t without leaves or flowers or fruit. When next they are dormant such plants as are selected may be transplanted. Such treatment is, of course, not necessary with any kind of evergreens.

It must be remembered that the roots of conifers should never be allowed to dry during the operation of transplanting. A good way to avoid drying is to "puddle" them at once, as nurserymen do, by dipping the roots in a thin mud or a mixture containing fresh cow manure and then wrapping them in wet straw or trash which will keep them moist.

Plants which grow in shallow rocky soil are rather difficult to dig because, in such soil, the roots spread widely, and in digging it is hard to avoid cutting off the smaller rootlets with the pick or spade. The moral to this is to get all the roots of the plant that you can.

Plants just transplanted must be watered immediately and the soil compacted sufficiently to bring the wet soil into close contact with the roots. Nor must the soil be allowed to cake and sun-crack later on, else the moisture will evaporate and the plants die. Practically nothing but cacti will bear transplanting into a dry soil without being irrigated at the time of transplanting, and we would irrigate cacti even if it were necessary to carry the water in a bucket.

THE BAMBOOS.

The genuine Bamboo should be grown by every farmer. The time will come when these giant reeds will be found as useful here as in other countries, where they are considered necessities; they grow to perfection in well-drained, deep, rich soil, and are very ornamental.

Valet—Do you think master's illness will prove fatal? 'E throws everything in the place at me, sir.

Doctor—No, Jorkins. Those are not death throes.

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Imported and Domestic Matings Now Ready. Surplus Stock All Sold. Let us book your order at once for future delivery. L. L. Viereck, Pres. Ancona Club of America, Albany, Oregon.

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OUR SPECIALTY
A fine assortment and large quantity of Acacias and Eucalyptus.
EUCALYPTUS—
Globulus, Rostrata, Corynocalyx, Rudis, Viminalis, Tereticornis, and other kinds
ACACIAS—
Melanoxylon, Baileyana, Floribunda, Cultriformis, and a dozen others.
Other Shade Trees and Ornamentals for the small planter or the large buyer.
Write us your wants.
Sycamore Grove Nurseries
Saint & Warner, 4584 Pasadena Ave, Los Angeles

Now is the Time to Sow **Sweet Peas**
NEW VARIETIES:
Countess Spencer—Orchid flowering, various shades of pink. 10c.
Gladys Unwin—Orchid flowering, pale rosy pink. 10c.
Helen Lewis—Orange pink. 15c.
Helen Pierce—Striped. 10c.
Hon. Mrs. E. Kenyon—Best and largest yellow. 10c.
Janet Scott—Rich soft salmon pink. 10c.
King Edward VII—Bright crimson. 10c.
Marchioness of Cholmondley — Soft shade of cream edged and overlaid with pink. 10c.
Phenomenal — Orchid flowering, blue edged white. 15c.
Theodore Payne, 345 S. Main st. Los Angeles

ROSES 15 for $1.00 postpaid. Field-grown plants, 10 inches to 2 feet. Send for Catalog.
Cedro Nursery, Gilroy, Cal.

Edison Phonographs, Victors, Zonophones
Records and Supplies, delivered at your nearest railroad station upon receipt of full retail price. Write for particulars and ask for catalogue.
Peter Bacigalupi & Sons, 1113-15 Fillmore St., San Francisco

PLANT THESE FOR GORGEOUS GARDENS

A Splendid New Collection of Flower Seeds, to Win New Laurels for The Chas. H. Lilly Co.

These varieties are widely different and include bed, vine and aquatic plants. Each is much improved over anything of the same species heretofore produced, and will excel in color effects and profusion anything you have ever before known in these varieties. Read descriptions carefully, and note our attractive Special Offer.

LILLY'S BEST SEEDS. BEST FOR THE WEST — LILLY'S BEST — SUPERIORITY THE REASON OF LILLY SUCCESS

Grown in Western soil and the recognized standard for all Pacific Coast States. Cost no more than seeds of unknown quality or unadapted Eastern origin.

LILLY'S GORGEOUS SINGLE DAHLIAS

Growing 4 feet tall or more, these Dahlias present a riot of rich, luxuriant color. The best sorts selected from the newest varieties; such valuable novelties as "Twentieth Century," "American Flag," "Lucifer," and other late introductions. The large blossoms are in many gorgeous shades—yellow mottled, black, scarlet with black hearts and stems, pure white, bright crimson, spotted—every imaginable combination of splendid coloring in brilliant contrasts. Blooming begins in June and keeps a continuous outburst of beauty until frost. Bulbs may be left in ground, where they remain ☐ ready for sprouting in the spring, without work or thought until time for the regular spring weeding and trimming. The blossoms make luxurious bouquets when cut with long stems and artistically arranged. Per packet 10c

COLUMBIA GALLARDIA

This plant blooms perennially, and first year of seeding offers a wealth of gorgeous yellow blossoms with dark maroon spots and discs. When grown in large groups in beds is strikingly effective in brilliancy. For decorative purposes most handsome. Its immense and brilliant flowers on long self-supporting stems "vase" handsomely, and remain perfect for a week after cutting. Blossoms are single and measure from 2 to 3 inches across. The plant blooms all summer and is hardy anywhere, being in ☐ nature a desert flower. Blossoms early in spring, and blooms continuously until frost comes. After first year the plants come on from the nature seeding of year before. Mixed colors, per pkt. 10c

LILLY GIANT EVER-BLOOMING LARKSPUR

Beautiful long spikes of large blue flowers; great quantities the first season from seed. Individual flowers light blue with white centers, dark blue with white centers, and light or dark blue with dark or light blue centers. Individual plants sturdy and very productive of new shoots; blooms all summer if old sprouts are cut off. They crave ☐ rich soil, and respond with ready growth. Very effective with other tall plants, or behind borders of lower plants. Grows 4 to 6 feet first year, 7 to 8 feet tall second year. All shades in the several combinations. Per packet 10c

SWEET-SCENTED SNAP DRAGON

Form brilliant garden beds, flowering prodigiously and continuously first season from seeds. These plants grow about 2 feet high, are healthy and stocky and completely enveloped with large snap-dragon flowers of splendid texture and substance; are very durable under all conditions of weather. Their continuous-blooming qualities, ease of culture, independence of heat and drought; and pure, bright colors, entitle them to a permanent place in all gardens. Although perennials, they do splendidly when grown as annuals; spring-sown seed produces flow- ☐ ering plants by July, which bloom in increasing profusion until frost. These flowers are nearly double the size of older sorts, and have a most delightful odor, while the old varieties are devoid of fragrance. Per packet 10c

EGYPTIAN LOTUS

The far-famed Egyptian Lotus is the easiest of all water lilies to grow; produces superb flowers and magnificent foliage in splendid tropical effect. The flowers are about a foot across when fully opened, of a deep rose or creamy white, and exquisitely fragrant. Sow in any good garden soil, finely sifted. The seed will usually lie dormant for a month or more. After sowing, pots should be submerged in water, which should be kept at about ☐ 70 degrees. Two inches of water over pots is sufficient. As soon as the seedlings make 2 or 3 leaves they should be transplanted. Wherever there is a pond, lake or other water, the Egyptian Lotus should be grown. Per packet 25c

IMPERIAL JAPANESE GIANT MORNING GLORIES

The vines present a beautiful wall of luxuriant foliage thick with flowers of gigantic dimensions. These flowers, measuring four to six inches across, are of limitless new and exquisite colors, while the shadings and markings produce a mass of such incomparable beauty that descriptions are ☐ inadequate. The blooms appear both double and single, the double producing dainty effects in myriad color variations. The plant is of strong and robust growth, vines quickly reaching a height of 30 to 40 feet. Per packet 10c

SPECIAL OFFER

$1.50 of above Seeds for $1.00. Six 10c packets for 50c (including one packet of Old Fashioned Flower Garden Seeds free). Three 10c packets for 25c. All postage paid.

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Surpasses all previous books in attractiveness and completeness of plant information; contains descriptions, price lists and culture directions for thousands of varieties of seeds, bulbs, roots and cuttings. Also is a hand- ☐ book of information on poultry foods and supplies, stock foods, fertilizers, garden supplies, sprays, horticultural supplies, etc. If you want one free, mark an X in the white square.

HOW TO ORDER

This offer of Lilly's Best Flower Seeds is intended solely for introductory purposes, and is available only through this advertisement. Mark an X in each white square opposite the variety of seed you wish to order, mark the quantity in square or on margin, figure up the total, clip out the ad., and remit in same envelope with the clipped ad. Be sure and write your name and address plainly, filling in the following blank:

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SEATTLE PORTLAND SAN FRANCISCO
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Enclosed is $_____ for which please send me Lilly's Best Seeds as marked above

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Sent on receipt of $1.00. Contains about 100 cuts of the most modern and artistic Bungalows ranging in price from $500 to $5,000. Address all orders to

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Rooted Vines

Emperor, Malaga, Tokay and Verdel. Limited Quantity.

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Eggs for setting, $1.50 per 13.
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For Quick Sale 3 Pens each, Wh. and Brown Leghorns. at $10.00 pen; 3 Trios Mammoth Bronze Turkeys, Eastern stock, at $10.00 trio.
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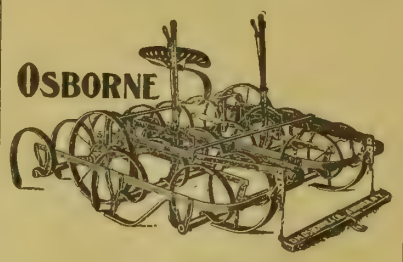

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50,000 Rooted Muscat, Sultana, Tokay, Concord
10,000 W. W. Pearmain, Winter Banana and Assorted.
Deciduous, Shade and Ornamental Trees, Elm, Maple, Umbrella, etc. Old-fashioned Flowering Shrubs, Weigelia, Lilac, Snowball, etc. Write for prices.
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For Sale, Blue Andalusians A Fine Breeding Pen, consisting of 11 hens and one rooster. Need room and must sell soon. J. W. Peckham, 1716 W. 20th St., Los Angeles, Cal. Phone Sunset W 1809.

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"Let It Be Soon"

Is the song the poultry sing when they are waiting for *A. C. W.* Food.

This is a joke of course, but honestly you would be surprised how your fowls will eat A. C. W. dry or in a mash, no waste. It is so good, clean, wholesome and pure. The acme of perfection in poultry foods. Our raw material fresh from the mill is A. 1. too. A. C. W. are always good, now better.

Write for our new 44-page book on care of poultry, diseases, cures etc.,

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BARRED PLYMOUTH ROCKS
Ocean Blue Strain

We are booking orders for eggs from our famous prize winning strain, bred in line for 19 years, and never defeated in the show room. Our pullet pens are headed by the best sons of our 1st and 2nd prize pullets at the big 1906 show, unexcelled in shape, color, and head points, pullets laying at 4 months and 18 days. Cockerel pen headed by our 2nd Cockerel, 1906, a grand bird properly mated to ten females of same line; none better. Eggs, pullet pens, $3.00 and $5.00 per 15; eggs, cockerel pens, $5.00 straight; $20.00 per 100 from all pens. Stock must be seen to be appreciated.

Mr. and Mrs. D. T. Wieland, Moneta, Cal.

Take Redondo car, Second and Spring St., via Gardena, get off at Illinois St., right on the ranch.

Mission View Poultry Ranch

WHITE WYANDOTTE WINNINGS, 1906

Four Firsts out of 5; 3 Special Ribbons out of 4 and Silver Cup, the specials being given by the National White Wyandotte Club. Won all prizes on Hens but one and all Pullet prizes were won by my stock, one of my customers winning two Cockerels, 1st and 3rd, Cocks 2nd and 5th. Pens 1st, 4th and 5th. **Mammoth Bronze Turkeys and Buff Cochin Bantams, Silver Laced Wyandottes and Lakenvelders** For Sale Cheap. Address
Mrs. C. D. Hubbard Box 282 San Fernando, Cal.

Golden Crest Poultry Ranch

RANDALL & ROBBINS, Props., SANTA ANA, CAL.

At the great Los Angeles Show, in the largest class of Buff Leghorns ever shown on this coast, we won COCKS 1st, 3rd; HENS 2nd, 4th; COCKERELS 1st, 3rd, 5th; PULLETS 1st, 2nd, 3rd, 5th; PEN 2nd. Buff Leghorn Cup for best display, all ribbons from National Buff Leghorn Club for best cock, hen, cockerels and pullet. More prizes than all of our competitors combined. On W. C. B. Polish we won, Cock 2nd; Pullets 1st, 3rd, 4th, 5th, on only six entries. We won 19 ribbons, 5 specials, 1 cup at the Panorama Show, 2nd White Wyandotte Cock and National White Wyandotte Special on one entry at Panorama. At Chutes we won 2nd White Rock Cock on one entry, 4th Barred Rock Cock on one entry. Stock and eggs for sale. Send for circular showing all of our winnings.

RANDALL & ROBBINS, BOX 412, SANTA ANA, CAL.

California Horticultural

By JOHN ISAAC, Sacramento, California

The Eucalypti

THE EUCALYPTUS is coming in- rapidly at that, if we can judge to public favor again, and very from the great number of inquiries made concerning it. When this tree was introduced to our State some years ago, it was somewhat of a curiosity and attracted much attention at that time for this reason, but the interest died out largely, and this valuable tree received little attention until within the past year or two. The reason for this revival of interest is plain. We have industriously destroyed our forests, until the government has been compelled to step in and endeavor to save the remnants. As a result, we are brought face to face with a possible timber famine, and we may add to this a fuel shortage, for a very large part of our people depend upon wood for fuel, and those who do not are dependent upon railroads to bring them coal, and the experience of the present season has shown that this is not always a reliable dependence. So, facing a timber and fuel shortage, our people have naturally turned to a new source of both, and this is furnished in the eucalyptus. This tree is one of the most rapid of growers; it can be topped frequently, its wood is hard and makes excellent fuel, while it is equally useful in the arts, many of the species furnishing excellent wagon timber and woods for furniture and for finishing building. There is no doubt, but that the newly awakened interest in the eucalyptus will be a permanent one, and that this tree will be grown all over our States and will very largely replace our destroyed forests.

CONQUERING THE PEAR BLIGHT.

Pear blight is still the principal subject of importance in the Northern California fruit sections. The great bulk of the pear crop has been grown in this part of the state and it has been, in the past, one of the chief and most profitable of our fruit crops. Of, course when an industry like this is threatened with destruction it awakens interest among all classes. Prof. Waite, while here, started the winter campaign against this disease and since his departure, the work has been going steadily on under direction of Prof. Scott, his assistant. Reports from all the pear sections where the campaign was carried on last winter, indicate that very effective work was done and that it has been fully demonstrated that, with careful cutting and close watching, the pear industry will be saved to our state. The orchardists themselves have fully awakened to the necessity of the work and also to the efficacy of it when properly done, and all through the pear section this winter thorough work is being done. California is now practically the last place in which the Bartlett pear is grown and it commands such good prices that every endeavor is being made to save it from ultimate destruction.

ESTABLISHING THE PARASITES.

Mr. Compere on his return from the Orient recently, brought with him a number of trees and plants infested with red and purple scale, which contained parasites. These parasites were so exceedingly small as to be invisible to the naked eye, and it was found impracticable to capture and ship them safely to distant points. For this reason the trees themselves were transported to Southern California and established in the midst of a scale infested section, in the hopes that the beneficial insects as they escaped from their original host insects might find a lodgment in the infested orchards, to which they were transported. If the experiment should prove successful, trees and branches will be taken from the orchards in which they have been established and transferred to other sections, until it is hoped, they will become generally established over the whole of the infested area.

A measurement at El Modena shows 14.36 of rain for the season.

PEACH BLIGHT.

There is a great deal of uneas at present over the spread of the p blight, and many orchardists think it is a new disease in our state, wh as it has probably prevailed, to a gr er or less extent, ever since pea have been grown. Certain it is, it has been a common disease f quarter of a century, varying in in sity with different seasons, and p ably largely influenced by clim conditions, appearing in such sea when conditions were favorable to growth with destructive force causing peach growers to fear their trees. Here is a statement cerning this disease made by Mr. Loomis, President of the Santa C Mountain Fruit Grower's Associa in the spring of 1883 and made a of the first report of the Inspecto fruit pests to the State Board Horticulture:

"In some localities here, peach t especially are badly affected with w they call "gum blight," and in s instances the trees are dead or ne so. It commenced with the yo wood and that which was the least tured, and gradually transmitted the whole tree. The branches covered with particles of gum."

When we consider that we had peach blight so bad before, and t it has been reduced below the dan line by natural causes, we may h that it will again become reduced it does not wholly disappear; at same time it will be well to take precautionary measures against it.

ABOUT VINEYARD STAKES.

This is the time of year when yo vineyards should be staked. Some v ities of grapes may be allowed to to the second year, before tying up, we always have a better vine if train them straight up from the ginning. Stakes are so scarce and high this year, that many will h to do without them or devise so substitute. To such we would reco men the following. If such material willow, popular, or other wood can obtained green, it can be split i stakes, and the smaller branches a used, these last must be first sharpen at the ground end and immediat after cutting and while still green, th should all be dipped for 24 hours in solution of bluestone 4 to 6 per cen this would be about 4 to 6 pounds bluestone to 12½ gallons of wat Stakes after being cut, must be di ped at once and not allowed to d out. If one has seasoned wood similar material, the ends may sharpened and charred in a fire, better dipped in a solution of miner paint, made with cast iron, cement a skimmed milk.

The best stake of all and one th should displace all wooden stakes a cement stake made as follows. wooden mould is made to take 6 12 stakes at each moulding, one-ha inch space between each stake, a moulded, is sufficient. The ends shou be pointed on two sides only. One two pieces of heavy close barbe wire, should be incorporated in th cement of each stake as it is place in the moulds. One part of goo cement to three parts clean, coarse sand is sufficient. Mix th cement fairly stiff, so as not to be so or watery. These stakes—well made will last a lifetime. They can be car fully driven, with a metal thimb to fit over the top, but if a good har wood maul is used, this is not neces sary. The moulds referred to are 2 for each stake.

Even if the stake should be broke or fissured, the wire will hold it i place—provided it is not shattered and it will serve its purpose almost a well as a sound stake. Anyone ac quainted with cement work. Can mak such stakes, and with a reasonabl price for cement and barbed wire, the are cheaper and better than the wood en stake and are practically ever lasting.— Dr. W. N. Sherman.

The rainfall for the season to dat is 14.97, against 3.15 for the same dat last year.—San Fernando Press.

Queries and Replies

SIGN YOUR NAME.

'Subscriber," Oxnard, who asks r information about grafting wal- ts "from A. to Z" is reminded that e enquirer's full name and address required before any notice will be ken of his request, other than to l his attention to the above require- ent of this office, from which we ver deviate. Your name will not be blished, but you must reveal your ntity and thus show your "good th."

rly Willard Potatoes.

We have enquiries about the Early illard potato and know nothing out it. Who can enlighten us?

ind Break.

Will you kindly advise me through e columns of the Cultivator what in ur judgement is the best means of otecting an orchard from high nds.—J. G., Seattle.

For best trees for wind-break we uld advise you to apply to your ate Agricultural Experiment Sta- on, stating where orchard is located. ey are in a position to advise you re intelligently than anyone else.

il Erosion.

The heavy rains and consequent ero- n of upland soils call attention to e need of some means of preventing rther damage from washing deep llies through the land.

Courses have to be provided for e escape of storm water, but these pidly cut down to great depths and m the falling in of their banks be- me enormous barrancas.

Is there any plant or grass that uld be planted on the bottom and des of these barrancas that would revent further erosion? How would ppia ripens do?—H. F. C., Ventura.

Prof. Forbes of the Arizona Ex- riment Station states in a bulletin at Lippia has been used for this rpose with the very best of success. ir observation on this point has l to the same conclusion, and we do t hesitate to recommend it.

llination.

Please state in your next issue, hich of the following kinds of pears id apricots will pollinate best.

Pears:—Bartlett, Le Conte, Beure lairgean, Patrick Barry, Winter elis, Beure Diel, Clapps Favorite. adeline, Flemish Beauty, Anjou, eckel, Beurre Rose, Josephine, No- eau, Poteau.

Apricots:—Newcastle, Royal, Moor- ark, Blenheim, Montgamet.—"Calexi- ."

Judging from bearing qualities, Le onte, Patrick Barry, Clapp's and adeline pollinate best. With apri- ots, Royal, Blenheim and Newcastle. f course, there is always a vari- tion with some seasons and istricts. Our opinion is drawn from xperiments made at the Experiment tation on the Chino Ranch. In the ry warm climate of your valley, there eems to be a more perfect setting of uit with some varieties, than there in the coast valleys.—J. W. M.

nsatisfactory Oranges.

There is one quality in my oranges hat I do not like, at all, the tissue hat encloses each section is very ough (on some trees only.)

They have not been frozen so I now it is not that, in every other espect the fruit is perfect, fine color, hin, fine skin. fine grained juice cells, verything good, but that toughness f tissue: what is the cause and reme- y; also every winter the leaves are o easily blown off.

We live up near the Arrowhead, and ave a great deal of north wind of ourse, but the north sides of the trees re nearly bare. We use, irrigating vater that has some of the water from he hot mineral springs in it; we con- ider that the cause, is it?. What an we do to remedy it?—H. A. H., San Bernardino.

If some of your trees produce fruit with tough fiber as you describe, while other trees in the orchard do not, it is evidently due to the char- acter of the trees and not the treat- ment. This is a case where proper se- lection of buds was neglected and some of your trees were grown from buds taken from trees that produced just that kind of fruit. Again, it may be possible that the buds which produced those particular trees came from a branch that was a sport, that is one which varied just that much from the regular type. This could not have been determined until that branch bore fruit. It is quite common for a tree to produce several types of or- anges at the same time and on the same side of the tree.

No doubt the mineral water has a bad effect on your trees, judging from your description. If you have no pure water to irrigate with, the best thing you can do is to use large quantities of it and keep the water moving down through the soil. This prevents an ac- cumulation of salts in the soil, great- er than the amount already in the water. This same problem came up at Corona with the Lake Elsinore water and the same advice was given to the growers by Prof. Hilgard and those who followed his advice came out with their orchards in good shape, while those who did not, lost heavily. The point is, that just before an ir- rigation,: there is a much greater percentage of water in the soil near the surface than there is immediately after, the water applied washing it down into the lower layers of soil. If but a light irrigation is given, this collection of salts from previous irri- gations is not far enough down to pre- vent its coming up again when the surface dries. Thus the amount in- creases continually. If an excess of water is applied, the excess of salts is sent down and off through the drainage. Of course this cannot be done unless there is good subdrainage. A clay subsoil would prevent such drainage.—J. W. M.

Water Glass.

Wil you please publish Mrs. A. Basley's receipt in full for preserving eggs in water glass, also the kind of vessel used? Your respt. E. A. P., Cordelia.

To keep eggs two things are neces- sary,—to exclude all germs of life from within and to exclude all germs of life from without. To exclude germs from without eggs must in some way be protected from the air. The two sure methods of keeping eggs a year are to preserve them, either in lime water pickle or in water-glass some- times called liquid-glass, or soluble glass, "silicate of soda" is the drug- gists' name for it. It is a liquid of a rather smooth, slippery consistency, something like glucose in appearence, readily soluble in water. The price at the large drug stores in Los Angeles and in San Francisco, is from sixty five cents to a dollar a gallon a ccord- ing to the amount taken, so it is cheap- er to join some of the neighbors and take from five to ten gallons. One gallon will be enough to preserve about sixty dozen eggs.

The directions for use are: Use pure water that has been thoroughly boil- ed and cooled. To each ten quarts of this water add one quart of water- glass. Pack the eggs in a jar and pour the solution over them. Or the solu- tion may be prepared, placed in the jar, and fresh eggs added from time to time until the jar is full, but be careful to keep fully two inches of the solution to cover the eggs. Keep the eggs in a cool place and covered to prevent evaporation. A cool cellar is a good place to keep the jar of eggs. Stone jars are the best recep- acles for the eggs, but they can be kept in thoroughly clean kegs or bar- rels. I have kept them in five gallon oil cans, but found the soda rusted the cans and the rust discolored the eggs. I have kept eggs every year for the last four years.—Mrs. A. B.

Cement Test.

A subscriber at Lemon Cove, wishes of cement made to determine value of a deposit on his lands. Who can tell him?

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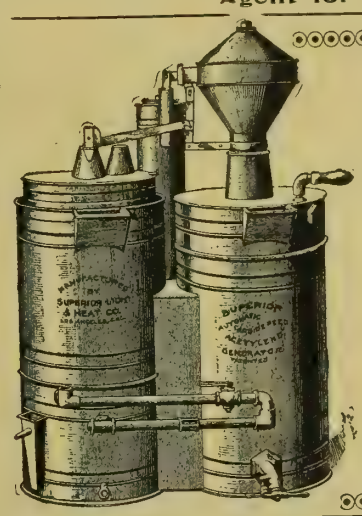

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Household Department

SOMETIME.

Last night, my darling, as you slept
I thought I heard you sigh,
And to your little crib I crept
And watched a space thereby.
And then I stooped and kissed your brow,
For oh, I love you so!
You are too young to know it now.

But some time you shall know.
Some time, when in a darkened place,
Where others come to weep,
Your eyes shall look upon a face
Calm in eternal sleep;
The speechless lips, the wrinkled brow,
The patient smile shall show—
You are to young to know it now,
But some time you shall know.

Look backward then into the years
And see me here tonight:
See, oh, my darling, how my tears
Are falling as I write
And feel once more upon your brow
The kiss of long ago—
You are to young to know it now,
But some time you shall know.
—Eugene Field.

The Teacher and the Rustlers

He was very much pleased at the settlement when a rattle-trap rigg drove up with a man and a girl. The man said he was lookin' for a convenient place for his daughter to open a school and wished to know if Scratch-gravel wanted one. He added able to give. We wanted a school mighty bad, not that the children needed l'arnin', for there wasn't no use for it at Scratchgravel, but their mothers liked to talk across lots with one another, and the children bothered 'em while they was doin' it. So the schoolmarm was engaged, her father drove away, and the children was kept cooped up for five hours a day while their mothers was a-gossipin'.

It was about this time that the hoss stealin' commenced. Not that we hadn't had hoss stealin'. We had. But somehow the rascals had found a way o'gittin' inside our corrals and stampedin' the stock. We organized a watch, but as soon as we did the hoss stealin' stopped. We dropped the watch, and it begun again. Then, the watch bein' too hard on the men o' the settlement, we took in the wimmen. Nobody saw nothin' till it come the teacher's turn, when the hull gang o' hoss thieves come down on us to oncet, and she lit after 'em ,firin' at 'em, and saved a dozen hosses they had loosed ready to run off.

This made the school teacher mighty popular, and, since she was a good looking gal with pink cheeks, several o' the bachelors o' the settlement wanted to marry her. But she wouldn't have none of 'em, sayin' her heart was with the dear little innocents she was teachin'. Another thing that lifted the schoolmarm in our affections was that she put us on to somep'n that we didn't think of before. She said that some one was loosenin' the hosses and the thieves would swoop down and drive' em off. This some one must be one of us. We all looked at each other suspicious-like, every feller wonderin' if he wasn't suspicioned. It wouldn't do to put any of us on watch for fear o' puttin' on the man that was doin' the business. At last two or three of us got together and after talkin' the matter over allowed we'd ask the teacher to do a little detective work to find out who the traitor was. This was natcheral, seein' she'd got on to the fact that there was a traitor. She said she'd keep her eye skinned for him, but unless she could ketch him in the act we wouldn't believe in his guilt. We swore we would and waited for her to work up the case.

While this was a-goin' on the rustlers had got away with most o' the hosses. Fact is there wastn't but half a dozen on 'em left in the hull settlement. One stormy night we heered a clatterin' o' hoofs and went out to try and save the stock. The hoss thieves had started the bull lot of 'em, but two had got away and turned back. Ben Hath-away and me got saddles on to 'em and lit out to try and save the other four. We chased 'em purty lively and was a-ketchin' up with 'em when the hoss one of 'em was ridin' struck a deep mudhole and fell. We was goin' right on, but he stood in the middle o' the road pumpin' lead at us, and we drew up. It was so dark we couldn't see him, and he couldn't see us; there fore he couldn't hit us nor we him. Suddenly there was a big flash o' lightnin', and there in the middle o' the road stood a women. But, though the flash was only instantan'ous, both of us saw for the millionth part of a second, plain as at noonday, the schoolmarm.

Before we had a chance to say anything to each other there come another flash, and three shots rung out after it and before the thunder. One 'o 'em was from the school teacher,and t'other two was from me and Ben. We heered a yell, and I, dismoutned', give my hoss to Ben and walked to the mudhole. I held my shootin' iron cocked before me, for there was plenty of lightin', and I didn't want to git plunked while lighted up by a flash. But the first bright one that come showed the woman layin' in a heap across the mudhole.

My conscience troubled me for shootin' a women ,even if she was in league with hoss thieves, and I went on, callin' to Ben at the same time to come on, too, hopin' the gal might not be dead and we could save her life. When we got to where she was she groaned, and we knowed she was alive. We couldn't do nothin' for her out there in the dark, so we put her on one o' the horses, holdin' her on, and walked back to the settlement. When we got there everybody was outside, some o' 'em with lanterns. What do you suppose that gal had the gall to do? She pointed to Ben and me and gasped:

"These two done it. They loosened the stock for the rustlers."

Well, there we was convicted o' hoss stealin' and had shot the gal that had been watchin' us.

The next mornin' airly we was both taken under a big tree and a noose throwed around our necks. They was just about to swing us off when a sheriff come dashin' into town lookin' for Kid Regan, the boy boss thief. As soon as he hearn o' the school teacher he asked to see her, and the minute he sot eyes on to her recognized her for Regan. But the kid defeated justice by dyin' the same day. That's how Ben and me was saved from a hoss stealin' death.—Amy B. Kennedy.

GOOD DRIVER IN BAD PLACE

We had ordered some coal from J. T., deal. I sat by the window when the first load arrived, and as the team came up the soft, muddy avenue toward the house I feared to see whipping and to hear swearing, and was on the point of retreating to the back part of the house to avoid the expected shock, when the driver began coaxing and patting the horses in the kindest manner.

The poor beasts in return strained every muscle in their efforts to bring the load up the ascent. The driver encouraged and coaxed, and all three seemed to work with mutual endeavor and good will. But all to no purpose. The wheels sank into the soft mud, and it was evident the thing could not be done; so he dumped the coal right down in front of the house.

I could not help going out and telling him how much it gratified me to see a man who had feeling for his horses. "Well," said he, "I don't see any use in beating animals when they are doing the best they can for us."

The same man came again and was equally kind and considerate, though he succeeded in getting his load to its destination. I have seen him bring coal to a neighbor since the last snow came, and he took his shovel along to ease the bad places.

May this good driver, in his turn, be kindly dealt with; and in his journey through life find some friendly hand to ease him in the bad places.—S. B. S.

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SHIPWRECKED LIFE.

There is a story current in Atchison, Kans., the home of the former Senator, Ralph Burton, to the effect that when he was fifteen years old a friend said to his widowed mother:

"How bright your boy Ralph is." And the wise women replied: "Yes, but it is the bright doys who make their mothers' hearts ache."

Ralph Burton had the best chance of any young man in Kansas. In the first place Nature had endowed him with a brilliant mind. He was a "bright boy from infancy to manhood." He was capable of winning prizes at school. He was impressively clever all through his youth; and Kansas people made it a point to help him.

It was the old story of the man with the talents. He who had much, received more. He who had little was likely to lose the little he had.

In politics Burton was as successful as he had been at school. Always a leader of the men, he had the knack of making them love his leadership. But down under it all the man lacked character. His smartness was not founded on the rock of genuine goodness. His house of hope was built upon the sand .And when the storm of temptation came that house went down. And great was the fall thereof.

It is a sad thing to send a senator of the United States to the penitentiary, but it would be a vastly sadder thing if a senator of the United States could violate law without having to pay the penalty which is laid upon other men. It is a disaster to interrupt a career so brilliant as that of Ralph Burton. But it would be vastly more disastrous if the country could not punish him, his offense having being proved.

The good that comes from the case lies in the fact that other men in and out of the senate will learn to respect law. They will get out of the notion that they are superior to it. They will be honest because it is dangerous to be anything else—even if they have no better reason.

But shipwrecked men are not necessarily lost.

As for him he is a young man, and this sentence to the penitentiary will be his ruin or his redemption, depending on whether he has any thing in him. If he has, he will come out and make his way in the world in spite of the load. If he has not, he will come out—and get in again.

And for the present that is all of Burton.—Salt Lake Inter-Mountain.

THE LIFE-SAVING SERVICE.

Last week was a busy and anxious time for the life-saving service on the New Jersey coast, and it is impossible at this writing to say how many lives have been rescued by these daring life-savers. It is a crying shame that no provision is made for these noble fellows who risk their lives for their fellow-man, and who, in event of an injury or sickness received in the performance of their duty, are left to care for themselves. If ever men deserved a place on the pension rolls it is these brave, daring men who patrol the beaches by day and night to warn vessels of their impending danger or to rescue their imperilled brothers of the sea from death.

We shall never rest content until the people rise up and demand of Congress a proper law that shall give the men of the life-saving service what is their just dues, so that when stricken down in their line of duty, and they are no longer fitted for active life, that ample provision shall be made to insure them some of the comforts of life in their days of need, and so that they shall not say that "Republics are ungrateful."—American Shipbuilder.

A DOUBLE DOSE.

A close-fisted old farmer thought there was a good chance to get some legal advice from the young man, gratis, so he dropped into his office, told him how glad he was that he had come into town, because the old judge was getting superannuated, and contrived in the course of the talk to get the legal information he wanted, and then bidding him good morning was about to leave when the young man asked for his fee. "What for?" said the old farmer. "For legal advice," replied the young lawyer." The farmer declared he would never pay it, and the young lawyer told him if he didn't he would sue him. So the farmer trotted down to see the old judge, whom he found hoeing in his garden, and said, "Judge, I went in this morning just simply to make a neighborly call on that young scamp of a lawyer who has just come into town and he charged me five dollars." "Served you right," said the judge. "You had no right to go to him." "Well, have I got to pay it?" "Certainly you have." "Well, then, if I must, I must. Good morning." "Hold on," said the judge, "Aren't you going to pay me?" "Pay you, what for?" "Why, for legal advice of course." "What do you charge?" "Then dollars." The result of which was the old fellow had to pay five dollars to the young lawyer and ten dollars to the old one.

DENATURIZED ALCOHOL.

There has been so much written and said about the proposed denaturized alcohol as a fuel that the ordinary person feels considerable interest and curiosity concerning it and its practical application. The law which enables this process of denaturing to be undertaken is now in effect and it will not be long before something definite will be known as to the real possibilities in the economy of a household as an illuminating and heating factor. The statement was made some time ago that farmers would not be allowed to have stills on their farms as it would be impossible to have them properly overlooked by revenue officers. On the heels of this statement comes the introduction by Senator Hansborough of South Dakota, of an amendatory bill, which will enable farmers to conduct small stills, the product to be cared for in a prescribed manner so that it will be subject to examination by revenue officials, to see of the process of denaturing has been complete, after which it is the farmers to use or dispose of. This is based on the German system, and is entirely feasible, it is said. Should this bill become a law the refuse of the immense beet product of Orange county would form the basis of an important industry, as it could be utilized for making denaturized alcohol. It certainly is a thing to be hoped for, not only here but all over the land and particularly in agricultural communities.

SOLVED THE PROBLEM.

A street-car horse balked, a crowd collected, and the passengers got out of the car. The driver brought his whip down across the horse's back without effect. A stout man who had just stepped off the car said: "Don't do that, I'll get him started." He rubbed the horse's nose, patted him on the neck, and talked persuasively, all without result. By this time four cars were stalled. Somebody suggested oats, another kerosene, a third a patrol wagon. Another a burning newspaper under the horse. Still it didn't move.

At last a girl of about 13 pushed her way through the crowd and said: " Say, mister, if you'll ring the bell twice the horse will think somebody has just got off, and he'll go ahead."

The conductor pulled the bell and the passengers had to run to catch the car.

PRESS CENSORSHIP.

"Our Dumb Anibals," a most excellent little magazine, published in Boston. has this to say in the January number:

"We are sorry that we have been shut out of the schools of Washington, D. C., because we cannot agree with President Roosevelt in regard to the shooting, wounding and killing of animals simply for the fun of shooting, wounding and killing them."

AUTO-BIOGRAPHY.

An autocrat in an autocart
Wailed: "Oh, this vehicle auto start!
My autotype of the guarantee
Reads 'automatic,' I plainly see.
And if autographs of the makers here
Have auto do with the running-gear,
I'd not be wasting an autumn day
In such a nonautomonotonous way,"
But he sat and sat, in the frosty fall,
Till an autopsy was the end of all.

To Cure a Cold In One Day.

Take LAXATIVE BROMO Quinine Tablets. Druggists refund money if it fails to cure. E. W. GROVE'S signature is on each box. 25 cents.

Sharpened Tools

Ever buy a hatchet that would sharpen a pencil? If you did, it was a Keen Kutter, for every Keen Kutter edged tool is sharpened at the shop. On the other hand —did you ever buy a hatchet that you had to grind before, using, and in grinding find a flaw or soft spot? That is the reason that most manufacturers do not give you a hand sharpened tool. They let you take the risk.

KEEN KUTTER

QUALITY TOOLS

are offered you with every risk of quality or temper removed. Edges are keen and perfect—temper and quality are tested and every tool is stamped with the name and trade mark for identification and guarantee. You don't need to be a tool expert to buy the best tool of any kind. Just ask for a Keen Kutter if you want a Saw, Chisel, Bit, Drill, Gimlet, Awl, Plane, Hammer, Hatchet, Axe, Drawing-knife, Pocket-knife, Screw-driver, File, Glass-cutter, Ice-pick, or any tool for bench, home, garden or farm.

Sold for 37 years under this mark and motto:

"The Recollection of Quality Remains Long After the Price is Forgotten." Trade Mark Registered.

If your dealer does not keep Keen Kutter Tools, write us. Tool Booklet on request.

SIMMONS HARDWARE COMPANY, St. Louis and New York, U. S. A.

Greatest National Bank West of Denver and South of San Francisco

First National Bank

United States Depository for Government Funds

CAPITAL, $1,510,000
TOTAL RESOURCES, $19,400,000

We are prepared to extend to the small depositor the same personal and careful attention that we do to our largest accounts.

ADDITIONAL ASSETS—One Million Five Hundred Thousand Dollars invested in the stock of the Los Angeles Trust Company and the Metropolitan Bank and Trust Co., and held by the officers of the First National Bank, as Trustees, in the interest of the shareholders of that Bank.

SPARR'S DELICIOUS TEAS

The finest quality, packed in 5-lb. air-tight packages, sent prepaid to any address on the Pacific Coast.

Golden Tip Ceylon No. 1, 5 lbs., $2.50.

Moon Light Japan (cured on porcelain), 5 lbs., $2.25.

Formosa Blossoms, Oolong flavor, finest tea imported, 5 lbs., $4.00.

A generous Sample mailed on receipt of 5 cents postage.

F. W. SPARR, 114 E. Market St., Los Angeles

Established 10 Years

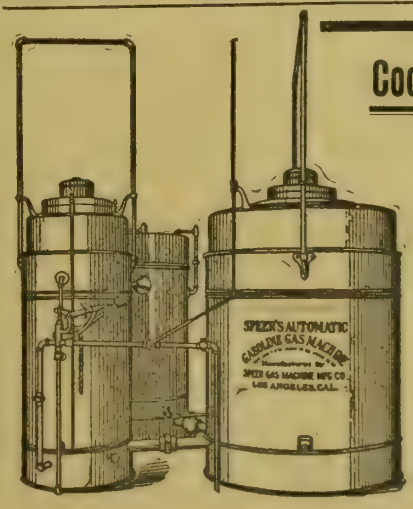
WITH A SIEVERT OIL BURNER

You can burn 100,000 cubic feet of air with every 130 gallons of oil; this means perfect combustion. To burn more than 100,000 cubic feet of air with 130 gallons of oil, there is a decided loss of heat. To burn less than 100,000 cubic feet of air there is a loss of fuel.

The only safe and reliable burner on the market.

Send for full particulars.

SIEVERT OIL BURNER CO. 1001 No. Alameda St., Cor. Main and Ord Sts, Los Angeles, Cal.



Cook With Gas and Save Money

Make Your Own Gas and Save More Money

This Machine will do it for you and give you better gas than any gas company will sell you. Write for our catalog. Agents wanted in every town in California.

Speer Gas Machine Mfg. Co.

922 Santa Monica Ave., Los Angeles, Cal.

Orange County Nursery & Land Co.

Successor to Orange County Nurseries

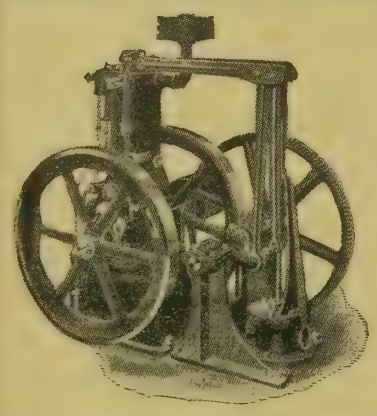
We have a large stock of Fruit and Nut Trees, Ornamental Plants, Roses, etc.

10,000 Valencia Late and Washington Navel Orange Trees.

Postal card gets you a price list.

We also have choice property, both improved and unimproved, for sale—Orange Orchards, Walnut Orchards, and Town Property. Tell us your wants.

Orange County Nursery and Land Co. **Fullerton, Cal.**



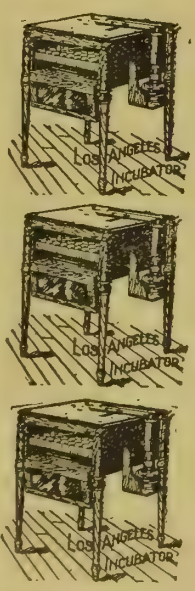
Little Wonder Engine and Pump

The **Little Wonder** is still a favorite. Those who have used it constantly say "It's a winner." Also that it's true to name in that it is a "Little Wonder." It is a handy little pumping and general utility engine. It will run the pump, feed cutter, the grinder, the churn—any old thing on the ranch.

Wm. Gregory

602 No. Main St., Los Angeles, Cal.

The Largest Poultry Supplies House in the United States



LARGEST INCUBATOR EMPORIUM On the Pacific Coast

MAKERS

"LOS ANGELES" HOT WATER — "PEERLESS" HOT WATER

AGENTS

"MODEL" HOT AIR

MADE BY

CHAS. A. CYPHERS

Peerless Chick Feed Composed of ten different Seeds and Grains, Beef Scraps and Charcoal, makes a complete balanced ration which insures health and rapid growth in baby chicks.

Granulated Milk Is made of pure skim milk, dried and ground to about the size of cracked grain. It contains 50% protein and 15% pure albumen. **$3.50 per 100 lbs.**

315 So. Main **Henry Albers Co.** **Los Angeles California**

MORSE SEEDS SPROUT

You and Nature do the rest

Alfalfa

from the best UTAH alfalfa section—clean and free from dodder and weed seeds. Also TURKESTAN alfalfa—recommended by the U. S. Department of Agriculture for dry land. Samples and prices of both, on request. If interested in CLOVER and GRASS SEEDS, and ONION SETS, write us.

Seed Catalogue now ready—send your name and your friends' names and addresses—for copies free.

171 Clay St. C. C. MORSE & CO. San Francisco

The Produce Markets

Los Angeles Markets

Los Angeles, Jan. 23, 1907.

Butter

Local Creamery, 2-lb, sq	.80
Valley Creamery, fancy	.65@80
Coast, fancy	.75@77½
Cooking	.22@24

Cheese

Cal. Young America, per lb	.18
California Anchor	.17
Cal. 3-lb. hand	.19
Northern	.17
Domestic Swiss	.20
Imported Swiss	.28

Eggs and Poultry

Eggs, fresh ranch, per doz.	.42
Northern candled	.40
Fresh Eastern	.37

The following are average prices which dealers pay to producers for live weight:

Hens, per lb	.14
Young Roosters, per lb	.16
Fryers	.16
Broilers, per lb	.18
Old Roosters	.8
Turkeys	.17
Geese	.12
Ducks	.13

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lb	7.50
Prime Steers.	.5
Heifers	.4
Calves, per lb	.5
Sheep, ewes, per head	5.25
Lambs, per head	7.50
Wethers	5.50

Potatoes

Salinas	2.10@2.20
Burbank, Local	1.90
Highland	1.85@2.00
Sweets, Yellow, per sack	3.00

Vegetables

Beets, per doz	.30@40
Bell Peppers, Green, lb	.3@4
Chili Peppers, Green	.2½@3½
Chili, Dried, per lb	.20
Cauliflower, per doz	1.25
Cucumbers, per doz.	1.00
Cucumbers, per box	.75@1.00
Carrots, per doz	.30@40
Celery, per doz.	.40
Casaba Melons, per crate	1.75@2.00
Egg Plant, per lb	.12
Garlic, per lb	.6
Green Corn, local, per sack	.75@1.25
Green Onions, doz. bunches	.15@25
Lettuce, per crate	1.00@1.25
Lima Beans, per lb	.7@8
Onions, Aust. Brown, sk	1.40@1.50
Onions, Y. Danvers	1.25
Parsnips, per doz.	.25@30
Rhubarb, per box	.75
Radishes, per doz	.20@40
String Beans, per lb.	.8
Sugar Peas, per lb	.7@8
Summer Squash, per box.	.40
Turnips, doz. bunches	.35@40
Tomatoes, per box	.65@75
Wax Beans, per lb.	.10@12

Citrus Fruits

Lemons	2,00@4.00
Valencias	1.50@2.00
Navels	3.25@3.50
Grapefruit Seedless	3.00@3.50
Grapefruit, seedlings	2.00@2.50

Fresh Fruits

Apples, Bellefluer, per box	1.25@1.40
Apples, Ben Davis	1.10@1.20
Figs, Black, per lb.	.8@9
Figs, White, per lb.	.8@9
Pears, Bartlett, per box	3.50@4.00
Pears, Winter Nelis. per lb	.6@7
Blackberries	12
Raspberries	20
Strawberries	20
Quinces, box	1.00
Grapes, Muscat	1.50
Grapes, Blk. Morocco	2.00
Red Tokay	2.00@2.25
Grapes, Cornichon	1.25@1.50

Dried Fruits

Evap. Apples, fancy, per lb	.9½
Apricots	.17
Peaches	.11@12½
Pears	.13
Plums	.11
Prunes, fancy	.7@9

Beans, Dried

Limas, No. 1, per cwt	5.50
Pink, No. 1	2.60
Lady Washington	2.90@3.00
Small White	3.60@3.75
Black Eyes	4.50@5.00
Garvanzas	4.25@4.50

Honey

The figures below are jobbers prices, that is, prices at which the jobber sells to grocers and others in small lots. The producers can take from this his freight to Los Angeles and one cent per pound for commission and will have left the net price to him.

Extracted, water white, per lb 60-lb. cans	.7½@8
Extracted, white	.7½
Light Amber	.7
Comb, water white, 1-lb fms	.16
Light Amber	.14
Beeswax	.25

Nuts

Almonds, new, per lb	.19@20
Peanuts, Virginia	.7
Peanuts, California	.6½
Walnuts, No. 1, S. S.	.14@15

Hay

Barley, No 1	14.50@16.00
Barley, No 2	11.00@12.00
Alfalfa, Local, per ton	14.00@16.00
Plain Oat Hay, No. 1	18.00@20.00
Plain Oat Hay No. 2.	9.00@15.00
Wheat No. 1	14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, No. 1, per cwt.	1.40
Barley (to producer)	1.00@1.05
Rolled Barley	1.30
Corn, per cwt.	1.40
Cracked Corn	1.45
Feed Corn Meal	1.45
Shorts	1.45
Bran	1.30
Oil Cake Meal	2.75
Cocoanut Meal	1.50

San Francisco Markets

SAN FRANCISCO, Jan. 22, 1907.

Butter.

California, ex. per lb	.38
California, firsts	.36
California, seconds	.28
Packing stock ..	.20

Cheese

New California, fancy	.14
Cal. Young American, fancy	.15

Eggs and Poultry

Fresh Ranch Eggs	.35
Eggs, first, per doz	.32½
Hens, per doz., small	5.50@6.00
Hens, large	6.50@8.50
Young Roosters, large	6.00@8.00
Young Roosters, small	4.50@5.50
Old Roosters, per doz	5.00@5.50
Fryers, per doz	5.50@6.00
Broilers, per doz.	3.00@4.00
Ducks, young	6.00@8.00
Geese; per pair	2.00@3.00
Turkeys, per lb	.17@19

Live Stock

Steers, No. 1.	.7½@7¾
No. 1 Cows and Heifers	.5½@6
Hogs, 80 to 130 lbs.	.6@6¼
Hogs, 250 to 350 lbs.	.6½
Calves, per lb	.4@5
Lambs, yerlings	.5½@6

Potatoes

Oregon Burbank	1.60@1.90
Salinas Burbanks, ctl	1.50@2.00
Rivers	1.50@1.65
Sweet Potatoes, ctl	2.50@2.75
New Potatoes....	4.00

Vegetables

Asparagus, per box	.125@1.50
Cucumbers, per doz	1.00
Chili Peppers, Green	.50@85
Egg plant per box	3.00@3.50
Green Peas, per lb	.9@10
Summer Squash, large crate	1.50@1.75
Onions, Red, per sack	.85@90
Onions, Yellow	.75@90
Peppers, Green, Bell	.40@75
Rhubarb, per box	.75@1.00
Summer Squash, large crate	2.00
String beans	.15@17
Tomatoes	1.65@1.75
Wax Beans	.15@17

Citrus Fruits

Lemons	.75@2.50
Valencias	.300@400
Sweets	3.25@3.50
Navels	1.50@2.75
Seedlings	2.50@3.00
Grapefruit	2.00@3.50
Limes	3.50@4.00

Fresh Fruits

Apples, fancy, per box	1.25@1.50
Apples, common, per box	.75@1.00
Blackberries, per chest	3.00@4.50
Cantaloupes, large crate	.40@1.00
Grapes, Seedless	.60@90
Grapes, Black	.40@75
Grapes, Muscats, crate	.100@1.25
Grapes, Tokay	.80@1.10
Plums, per box	.75@1.00
Pears,	1.50@2.00
Prunes, per box	.60@85
Raspberries, per chest	12.00@14.50
Strawberries, Longworths	7.00@8.00

Dried Fruits

Apples (evap.)	.7@8
Apricots, per lb	.15@18
Figs, white	.2½@4
Muscatels (loose)	.7@8
Prunes	.2@2½
Peaches	.10@12½
Raisins, seeded (1906)	.8½@10
Thompson, unbleached	.7½
Thompson, bleached	.9@11

Beans and Seeds

Limas, No. 1	4.25@4.40
Pink	1.95@2.10
Large White	2.00@2.35

Small White	2.80@2.95
Black Eyes	4.25@4.50
Red Kidneys	3.40@3.75
Bayo	2.00@2.30

Hops

1906 Crop (future)	12½@16

Nuts

Almonds, new	15@17½
Peanuts, Virginia	6½
Peanuts, California	5½@6
Walnuts	11@15

Honey

Clear White Comb	16½
Amber	14@15
Extracted	5½@7

Hay

Barley, No 1	12.00
Barley, No 2	10.00
Alfalfa, local	8.00@12.50
Oat	12.00@18.00
Wheat No. 1	19.00@23.00
Wheat, No. 2	13.00@16.00

Grain

Wheat No. 1	1.25@1.30
Barley No. 1	1.12@1.15
Corn, small yellow	1.50@1.55
Corn, yellow	1.27@1.30
Oats. White	1.45@1.55
Oats, Red	1.30@1.75
Ground Barley, per ton	24.00@25.00
Bran, per ton	20.00@22.00
Straw, per bale	60@80
Feed Corn Meal, per ton	32.00
Cracked Corn, per ton	32.00
Oil Cake Meal, per ton	38.00
Cocoanut Meal, per ton	25.50
Calalfa Meal, per ton	21.00
Mealfalfa, per ton	21.00

Citrus Markets

NEW YORK TUESDAY MARKET.

NEW YORK, Jan. 22.—The market is very active, and higher on all sizes. Offerings are generally of good color, and quality. Nine cars oranges were sold here today. Weather cloudy.

NAVELS—	AV.
Mariposa, fy, C. C. U. Dist No. 18	$2.70
Mistletoe, ch, C C U Dist No. 18	2.55
Wildflower, ex ch, C C U Dist No 6	2.45
Gold Buckle, ex fy, S B Ft Ex	3.00
Lochinvar, ch, S. B. Ft Ex	2.75
Blue Seal, fy, A C G Ft Ex	2.80
Red Shield, ch, A C G Ft Ex	2.35
Green Crown, sd, A C G Ft Ex	2.25
Blue Globe, ex, fy, Riverside Ft Ex	3.00
Red Globe, ex ch, Riverside Ft Ex	2.70
Table Mountain Butte Co. C Assn	2.60
Signal, ex fy, Stewart Ft Co	2.95
Warrior, ex, ch, Stewart Ft Co	2.70
Flower, fy, Upland Dist	2.50
Lion Head, extra fy, Lyon & Son	3.25
Tiger Head, ex, ch, Lyons & Sons	3.05
Lion Head, ex fy, Lyons & Sons	2.90
Tiger Head, ex ch, Lyons & Sons	2.65
Lone Palm	2.30

MONDAY'S MARKET.

NEW YORK, Jan. 21.—

NAVELS—	AV.
Mariposa, ex fy, C C U	$2.90
Badger, ex fy, C C U	2.25
Herald, ex ch, West Am Ft Co	2.60
Mountain Lion, fy, F H S & Co	2.35
Gold Buckle, ex fy, S. B. Ft Ex	2.75
Lochinvar, ex ch, S B Ft Ex	2.75
Butterfly, ex ch, Covina Ft Ex	2.60
Laurel Q. C. Ft Ex	2.10
Corona Lily Q. C. Ft. Ex	1.95
Oak Leaf, T. C. Ft Ex	2.10
Signal, ex fy, Stewart Ft Co	2.85
Warrior, ex ch, Stewart Ft Co	2.70
Standards, sd, Stewart Ft Co	2.10
Oak Leaf, ch, T C Ft Ex	2.20
San Juan, o. r. Fair Oaks Ft Co	2.70
Stock Label	2.25
Homer Orange Hts Ft Assn	2.45
Camel Q. C. Ft Exchange	2.20
Mt. Harrison, T. I. F. L. Sewell	3.05
Mt. Harrison, fy, F L Sewell	2.95
Flower, o. r. Upland Dist	2.50
Flower, ch, " " "	2.35
Mission Bells A B Chapman	2.60
Stalk	2.40
Flower, o. r. Upland Dist.	2.40
Flower, ch, Upland Dist.	2.30
Criterion, o. r. Penn Ft. Co	2.70
Wolf, sd, Penn Ft. Co	2.55
Orchard, o. r. Nat. O. Co	2.90
Standard, sd, Nat. O Co	2.60
H. M. Brand	2.30
LEMONS—	AV.
Flower, ch, Upland Dist	3.15
Independent, fy, Highland Dist	4.00
Independent, o. r. Highland Dist.	3.50
Independent, ch, Highland Dist	3.35
TANGERINES (Halves)—	
Flower, fy, Upland Dist	1.75

BOSTON, Jan. 21.—The market is steady on good fruit. The weather is cold. Twenty-one cars on track.

NAVELS—	AV.
Rose, ex fy, Reds O G A	2.85
Trophy, ex, fy, C C U Dist No. 2	2.60
Trophy, ex fy, C C U Dist No 2	2.40
Ruby, fy, C C U Dist No 12	2.20
State, fy, Randolph Ft Co	1.85
Tulip, ex ch, T C Ft Ex	2.75
Rebecca, ex ch R. H. Ft Ex	2.65
Carne Q C Ft Ex	2.45
Crafton, fy, Crafton O G A	2.80
Buena Vista	2.55
Mistletoe, ch C C U Dist No 18	2.35
Triumph C C U	2.15
Forget-Me-Not, ex, fy, T C Ft Ex	2.90
Overland, ex, fy, R H Ft Ex	2.80
Homer, Q C Ft Ex	2.65
Seedless, fy, T C Ft Ex Reedley	2.10
LEMONS—	AV.
Peerless ch, San Diego Ft Co	2.40
Sunset, sd, San Diego Ft Co	2.30

PHILADELPHIA, Jan. 21.—The market is steady. Weather cold. Nine cars navels and two cars lemons sold here today. Twelve cars Florida oranges sold.

NAVELS—	AV.
Clover, ex ch, Reds. O G A	2.75
Independent, fy, Highland Dist	2.30
Independent, ch, Highland Dist	2.25
Purity, fy, E E Wilson, Orange	2.15
Pocahontas, fy, T C Ft Ex	2.75
Pointer, ch, A C G Ft Ex	2.20
Stag, ex fy, A C G Ft Ex	2.70
Pointer, ex ch, A C G Ft Ex.	2.25
Sunshine	2.40
Anemone, ex ch, C C U Dist No 20	2.30
Lighthouse, sd, C C U Dist 20	2.20
Lucky, ch, E. E. Wilson, Orange	2.05
Hiawatha, ch, T C Ft Ex	2.70
Hunter, sd, A C G Ft Ex	2.20
Hunter, sd, A C G Ft Ex	2.15
Lochinvar, ch, R H Ft Ex	2.55
LEMONS—	AV.
Visalia, fy, T C Ft Ex	3.90
Lemon Cove ch, T C Ft Ex	3.40
A A A A, A Kern	3.00

PITTSBURG, Jan. 21.—The market is steady, weather cold.

NAVELS—	AV.
Pyramid, o. r. Strachan Ft Co	2.70
Pionter, ch, A C G Ft Ex	2.50
Stag, T. I. A C G Ft Ex	2.85
Hunter, T. I. A C G Ft. Ex	1.75
Standard S. T. Ft Ex	1.90
Stag, fy, A. C. G. Ft Ex	2.75
Hunter, sd, A C G Ft Ex	2.45
Pointer, T. I. A C G Ft Ex	2.80
Choice S T Ft Ex	2.10
Forget- Me-Not, ex fy, T C Ft Ex	2.75
LEMONS—	AV.
Whittier, ex ch, S T Ex	3.10
Pico, sd, S T Ex.	2.90

CLEVELAND, Jan. 21.—The market is steady. The weather is very cold. Three cars sold.

NAVELS—	
Anemone, ex ch, C C U Dist. 20	1.70
Pico, sd, S T Ft Ex	2.20
Manzanita, ch, S T Ft Ex	2.15
Lighthouse, sd, C C U Dist No 20	1.30
Sequoia, fy, S T Ft Ex	2.40

ST. LOUIS, Jan. 21.—The market is firm on good stock. The weather is down to the freezing point. Five cars sold here today, seven cars on track.

NAVELS—	AV.
Old Oak	2.40
Liberty Bell, ex ch, C C U Dist 11	1.85
Belt, ch, R H Ft Ex	2.45
Bridal Wreath	2.15
Lochinvar, ch, R. H. Ft Ex	2.60
Parrott, ex ch, S A Ft Ex	2.10
LEMONS—	AV.
Bon Ton, sd, A H Ft Company	2.55

CITRUS FRUIT SHIPMENTS.

LOS ANGELES, Jan. 21.—Oranges, 58 cars; lemons, 2 cars. Total to date this season, 3076 cars, of which 483 are lemons. Total to same date last season, 4920 cars, of which 684 cars were lemons.

The big rain fall of the week has proved a blessing in a rather unexpected way to the cabbage growers, as it has cleaned the young plants very thoroughly from mites. These tiny foes had made their appearance by the thousands on plants which have been set out less than two months. The big rain has been spraying unnecessary, the bugs having been literally drowned off, and the plants are left in the best of condition.

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For one, two or even three hatches. We pay the freight. No company could make a fairer offer. We know the Old Trusty will do the work satisfactorily for you and we will take the chances, not you. Send and get the prices on these Incubators and we will make you the lowest price you ever heard of for a first-class Incubator. Now is the time to order. WRITE US TODAY.

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Won at Los Angeles Show, the largest ever held on the Coast, 225 Barred Rocks in class, as follows: 1st, 2nd and 5th Pens; 1st, 3rd, 4th and 5th Hens; 1st, 2nd 3rd and 4th Pullets; 2nd Cockerel. Barred Rock Club Cup for Best Display; Association Cup for Best Display, and Three Incubators, one for Best Pen in Show, all breeds competing.

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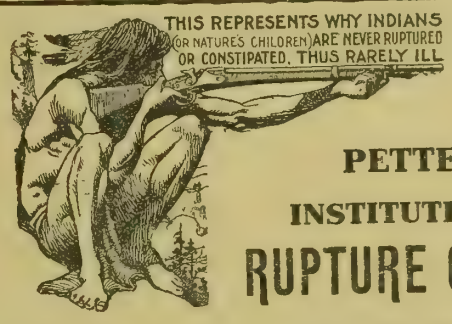

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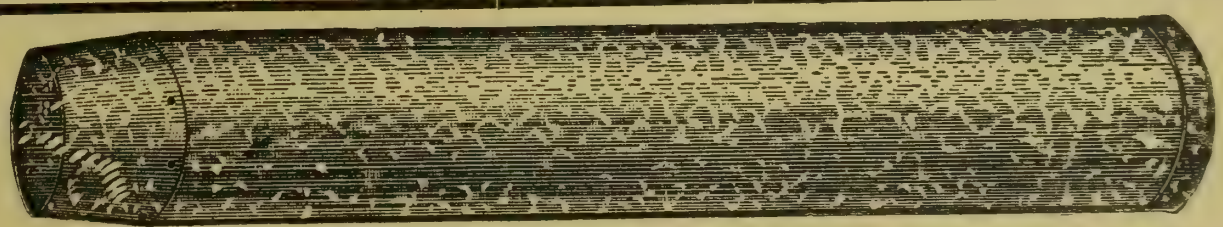

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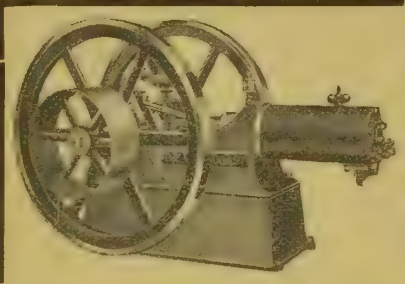

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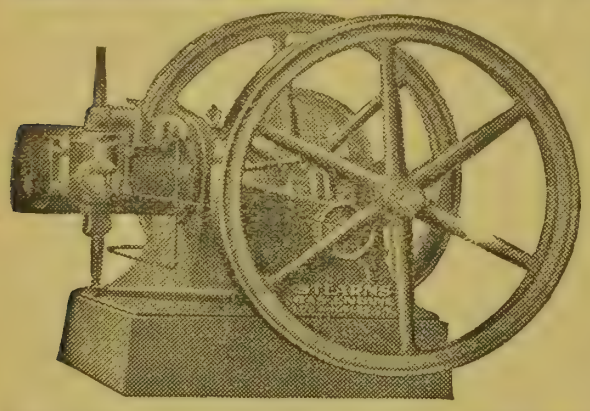

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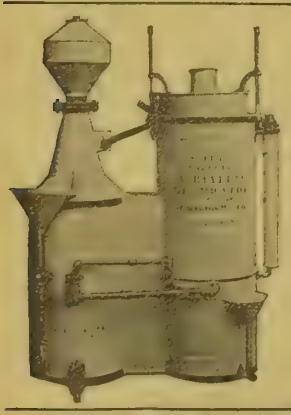

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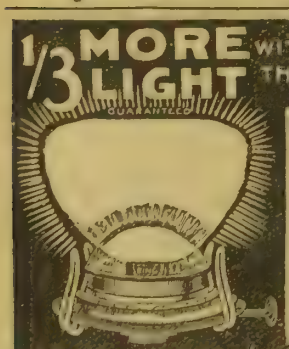

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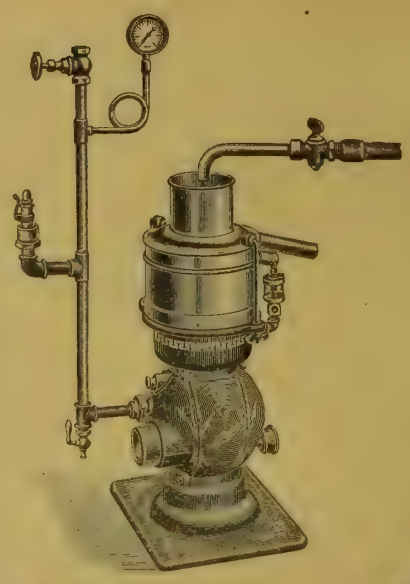

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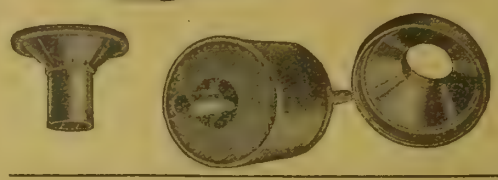

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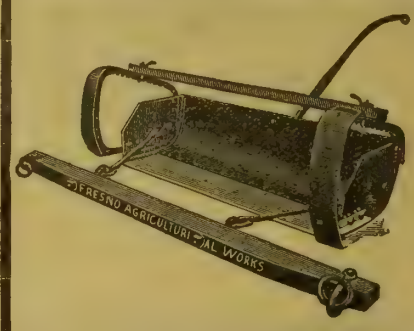

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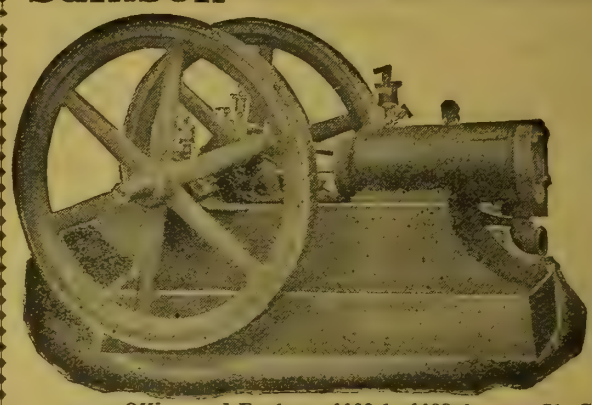

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A First Class Engine at a Moderate Price

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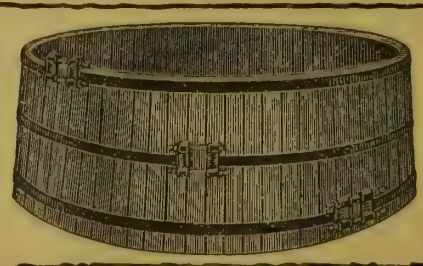

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California Cultivator

Los Angeles January 31 1907 San Francisco

Irrigation in Central California

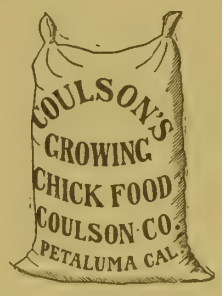
A Laguna Irrigation Canal

WHEN Prof. L. H. Bailey came to California in 1901, he stopped at various points to study local conditions and practices. One man preparing land for irrigation, though all signs pointed to rain, was asked why he preferred irrigation to rain. He answered, "Irrigation is better and cheaper than rain, for several reasons," and proceeded to give these reasons which were good and sufficient.

In Southern California irrigation was practised first as a necessity because of the inadequacy and uncertainty of the rainfall. In Central California, it was not begun so much of necessity as of convenience. The broad acres of the San Joaquin and Sacremento valleys could usually be depended upon to bear prolific crops of wheat and other cereals, and it was only when the greater possibilities of fruit growing had been demonstrated through the application of irrigation that this method of supplying the thirsty soil began to be extensively practised.

These immense valleys had the experience of Southern California upon which to base their operations, for in the south King Water had transformed that section of the state from a desert to a land of gardens. It was not until many years after irrigation had worked this transformation south of the Tehachapi that the general practice reached farther north, and though today the older watered sections are still pointed out as examples of what artificial watering will accomplish, the central portion of the state has by far the most extensive water supply as well as the greatest number of acres which may be brought under its life-giving influences.

But a few weeks ago the Cultivator published extracts from an article entitled, "Wealth in Irrigation," penned a few years ago by an employe of the government, who is still writing extensively on the subject of irrigation. So rapid has been the development of irrigation in Central California that the publication of the comparisons therein set forth has aroused the just anger of some of our good people of that portion of the state, and the justification of their ire appears all the greater when it is readily seen that the author's geography is somewhat mixed. Our state is so vast and so varied in its topography as even to confuse some of our oldest citizens, and an investigator from the national capital cannot be expected to master the problem during a visit of a few short weeks. The fact is that since the first publication of the article in question Central California has become a land of irrigation canals, tapping all her immense waterways, and scenes like the one here presented, of a canal on the Laguna de Tache Grant, near Lemoore, are common sights all over that section of the state. These giant arteries and their tributaries are rapidly transforming the San Joaquin and Sacramento valleys from vast fields of grain into small well-tilled farms, for the thousands of homeseekers who are each year attracted to these fertile sections.



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Is a mash feed for the growing chicks, designed for feeding when you leave off feeding Coulson's Special Dry Chick Food, composed of articles, each the best in its class, combined in the correct proportion to form

A PERFECT BALANCED RATION

It contains blood meal, meat meal, bone meal, and other articles rich in protein, and the other elements, and is the feed you need to make your chicks excel in size and weight and enable them to become strong, vigorous and heavy-laying fowls.

COULSON'S GROWING CHICK FOOD WINS OUT

San Marcos, Cal, July, 23, 1906.
Gentlemen:

I tried COULSON'S GROWING CHICK FOOD exclusively my first year in business on Brown Leghorns. I sold the cockerels as broilers at nine weeks, averaging 2 pounds, 3 oz. each.

I tried my own mixture of feed the next year and took the same care of the chicks, and sold 75 cockerels as broilers, weighing 105 pounds, making an average of about 1 1-4 pounds each.

Having tested at my own expense the two methods I have concluded that COULSON'S FOOD is superior.

(Signed) J. B. HOOVER.

Coulson's Special Dry Chick Food

Is acknowledged by all The Best and most Reliable Feed for Baby Chicks.

COSTS LESS THAN 2 CTS. FOR FIRST FOUR WEEKS

ONLY HIGHEST QUALITY GRAINS, ETC,, USED

Special Dry Chick Food contains numerous different seeds adapted to needs of the little chicks, besides meal, charcoal, bone and many other necessary articles, each in Granulated form making

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CANNOT PRAISE IT ENOUGH

"I cannot say enough in writing in praise of your Special Chick Food. It is just fine. I never saw chicks do so well before."

J. S. SCOTT, Madison.

PULLETS LAY EARLY

"I have fed your Special Chick Food and Growing Chick Food to all my stock with one exception. I tried one lot of 350, and fed them my way of raising chicks back East. Results just fair. The other were fed up to three months on your Special Chick Feed, and the results were a surprise to me. The birds were large and the cockerels out of one lot I sold to the California Market and got a big price, with the request to send on to them at any time I had more cockerels of the same quality."

Respectfully, A. P. WARD,
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Where Coulson's Special Dry Chick Food cannot be obtained from local dealers, we will ship, freight prepaid to any railroad station in California, 100-lb. sack for $4.00, or 200 lbs. for $7.50, cash with the order.

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Famous Prize Winning White Plymouth Rocks

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Sold to Arthur J. Little

In this flock are the following prize-winners at the late Los Angeles show, the largest show ever held west of Chicago—2036 entries—2nd, 4th & 5th Cocks; 1st, 2nd 4th & 5th Hens; 2nd, 3rd & 5th Cockerels; 2nd, 3rd, 4th & 5th Pullets; 1st, 3rd & 5th Pens; special for 10 best pullets in show.

This in connection with my present large flock is conceded by breeders and judges as the

Best Flock of White Plymouth Rocks

west of the Rocky mountains if not in the United States.

Champion White Rock Hen
"QUEEN B"

I am offering for Immediate Sale at a Special Bargain—

125 Extra Choice Cocks and Cockerels

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400 Hens and Pullets 400

Will sell singles, pairs, trios, or pens; will have birds mated for best results by expert breeders and judges of White Plymouth Rocks.

Eggs for Hatching

From birds that won as follows, at the 1907 Los Angeles show: 2nd, 3rd, 4th & 5th Cocks; 1st, 2nd, 3rd, 4th & 5th Hens; 1st, 2nd, 3rd 4th & 5th Cockerel; 2nd, 3rd, 4th & 5th Pullet; 1st, 2nd, 3rd, 4th & 5th Pens. Special for best 10 Pullets in show, all varieties competing.

23 Out of a Possible 25 Prizes

Never in history have so many prize-winners been owned by breeder.

$2.50 for 15, $10.00 per 100

From special matings containing my very best prize-winners $10 per 15. Correspondence carefully answered. Visitors welcome.

Arthur J. Little
Monrovia, Cal.

Get off at Mayflower, walk north two blocks, thence West two blocks to ranch

California Cultivator

Vol. XXVIII—No. 5 Los Angeles, California, Thursday January 31 1907 Subscription $1 a Year

Riverside Citrus Growers Institute

Notes of the Largest and Most Important Gathering of Citrus Growers Ever Held on the Pacific Coast

By ERNEST BRAUNTON, Los Angeles, Cal.

THE SPECIAL CITRUS FRUIT GROWERS' Institute held at Riverside during three days of last week proved to be the largest, most important, most enthusiastic gathering ever witnessed at a Farmer's Institute in this state. Every important center of the citrus fruit industry was represented and few sections south of the Tehachapi were unresponsive to the call. It is safe to say that all the big men of both orange and lemon growing were there, or if they were not, so many of them were present that the absentees were scarcely missed. Enthusiasm was at all session clear to the top-notch, all visitors seeming elated because of such a notable and representative body, and nothing happened during the whole meeting that anyone present would recall or that gave rise to the least regret. The profit and pleasure of this institute will linger, pleasantly, in the memory of all present, both participants and onlookers for many a year and history will be able to record at least one gathering of fruit growers that fully met all expectations.

Tuesday, Jan. 22nd.

The first day's program commenced at 1:30 p. m. with Mr. J. B. Neff, Conductor of Farmer's Institutes in Southern California, in the chair; Mr. T. C. Evans of the Riverside Chamber of Commerce as Secretary and Mr. S. D. Pelton as special institute stenographer. Mr. J. H. Reed, who is, and has ever been, first and foremost in all good work for the interests and welfare of Riverside and vicinity, delivered a rousing address of welcome which evoked hearty and spontaneous applause. This excellent address was all too long to reproduce here, but the ground he covered included nearly everything that could generally be said in regard to the citrus growing industry and is fairly outlined in the following short extracts:

"The foundation of the prosperity that has made it possible to gather about us and about you in your towns, the comforts and esthetic features that add to the satisfaction of living, has been, and is, in our orchards, and we are here met today to consider what we believe may prove important factors in perpetuating the prosperity they have given us. It is the part of wise business to carefully scan the future conditions that may effect it, whatever the present may be. . . . . Its present prosperity may be directly traced to natural conditions, to intelligent labor, to organizing ability. Certainly not to improved quality of product, not to economy of production.

In our efforts to advance our industry we have secured quantity, but not quality. That the easy conditions which have secured favorable results on the whole, are rapidly changing, I think no one doubts who has given the matter intelligent attention. . . . . Now, what are the real conditions we face even in the near future? A large annual increase of product from our own plantings—an increase of not less than 40,000 cars before the first decade of the new century closes—I believe a conservative estimate. Were present financial prosperity over the country ensured to that time the increase in consumption at present quality and prices possibly might keep pace with the increase of product. But I do not believe sagacious business men in other industries will base future plans on indefinite continuance of present phenomenal prosperity."

Following Mr. Reed's address came an outline of the purpose of and the particular lines of work to be carried out at the new Citrus Experiment Station at Riverside. This task had been assigned to Prof. E. J. Wickson, but owing to delay of trains was ably disposed of by Prof. Ralph E. Smith, who has charge of this station and the laboratory adjunct at Whittier.

The "Symposium on Success with Lemons" was opened by R. C. Allen of Bonita, San Diego county, in an instructive practical talk from his standpoint as a grower and manager of large acreage. He suggested that the new citrus station should be on lines broad enough to admit of experiments with the several standard varieties of lemons.

H. B. Hampton of Corona presented his views on the subject from the growers' and packers' standpoint.

C. C. Teague of Santa Paula, one of the most successful lemon packers and growers in the state, gave practical hints from his own experience and touched upon the subject of picking and care, based upon the unusual success he is known to have attained during the past few years.

C. C. Chapman delivered a very felicitous address upon care of fruit from orchard to car, which was received with much interest, and said by all whom the writer heard express an opinion, as being Mr. Chapman's masterpiece among his many institute talks.

Mr. F. A. Little, a little late on the program, also gave his experience in the care of lemons in shipping. No report of the institute would be complete without mention of Kenneth MacRae of Rialto, who spoke on several topics under one general head and provoked considerable laughter by his sallies of wit.

In the evening the secretary read a paper on "The practical value of scientific work as illustrated by the commercial results from G. Harold Powell's investigation, written by Mr. B. A. Woodford, Manager of the California Fruit Growers' Exchange. This was a condensation of the many reports of Mr. Powell's work, which has from time to time appeared in the Cultivator. At the outset Mr. Woodford paid high tribute to Mr. Powell's work and especially commended Mr. J. H. Reed, who was mainly instrumental in getting the Agricultural Department to send Mr. Powell to California.

In the discussion following Mr. Woodford's paper, the opinion was unanimous that Mr. Powell's investigation had been productive of the best results in preventing damage to fruit in picking, hauling and handling fruit in the packing-house. The damage by picking was not by any means all done by hired pickers, but in one special case where the owner picked himself there was 65 per cent. of one load of fruit damaged. The remedy recommended was careful supervision in the orchard and everywhere else, and day work in place of piece work.

In the absence of Benjamin Ide Wheeler, C. C. Chapman was called on, to talk on orchard management, which he discussed under five heads, namely, cultivation, irrigation, fertilization, pruning and insect pests. He believed in thorough work and insisted on it on his own place. Deep furrowing for irrigation, plenty of water while being applied. After that, deep and thorough cultivation. The same rules apply to fertilization. Liberality in quantity of all the three essential elements. Pruning was necessary to produce abundant crops of fine fruit, and the best results could not be obtained unless insect pests were kept under, and the best way to fight them was to fumigate.

Wednesday, Jan. 23d.

Wednesday morning's session opened at 8:30 o'clock with a question box conducted by J. B. Neff, the director of the institute and was participated in by a goodly number, covering many important problems and topics.

A practical discussion on the question, "Has Any One Shown in Actual Experience What Are the Specific Requirements for Securing a Larger Proportion of Finest Fruit?" was led by C. E. Rumsey of Riverside and was listened to with marked attention.

C. C. Chapman of Fullerton, who has made the Old Mission brand of oranges famous, added his experience in securing fancy fruit, to which everyone listened most intently, for Mr. Chapman bears the enviable distinction of receiving more for his fruit than any grower in the state, and all were listening for something unusual and startling to drop. It didn't happen.

Matthew Gage told of experiments in growing for size, and asked if there was not danger of getting too large fruit by pruning. Mr. Chapman was of the opinion that pruning developed more fruit as to number, rather than size.

E. A. Meacham said that of all experiments in bettering the quality of fruit, the one he had found most successful was that of giving one heavy irrigation each year, with the lighter ones. This eliminates the plow sole. His longest irrigation was thirteen days at one time.

Next followed a paper on Experiment Stations, by Prof. A. J. Cook of Claremont, which contained many good points and was listened to with close attention. He was followed by Prof. C. R. Paine of Crafton, who read a paper on "Practical Problems for Solution by the Citrus Experiment Station."

Prof. Paine has grown a large variety of citrus fruits on an extensive scale for many years past.

After the recess at noon J. H. Reed read a report from the committee on a permanent organization of citrus growers in the State of California, which is as follows:

Your committee respectfully recommend the formation of a citrus Growers' Association of California. Its purpose to be by organized effort the betterment of citrus growing interests.

(Continued on page 106)

100,000 Berry Plants

NOW READY

Burbank's Phenomenals
Red Logans
Mammoth Blackberry
and Other Varieties

Catalogue Now Ready

A. Mitting

17 to 23 Kennan St. Santa Cruz, Cal.

Grafted Walnut Trees

Placentia Perfection

1000 First-Class Trees, 10 to 13 Feet High

These trees were raised for our own use and are the surplus over our requirements. Growers who have both grafted trees of this variety and common seedlings, say they would pay $5.00 per tree for Placentia Perfection Grafts, rather than plant seedlings. They bear earlier, the nuts are less subject to blight, and sell at a big premium, being unquestionably the most ***perfect nuts on earth.*** Address

Leffingwell Rancho, Inc., Whittier, Cal.

Tom Lewis' Fertilizer The Best and Cheapest

For Orchard, Garden or Field it has no equal. A trial will convince you of its merits. Send for my circular of testimonials.

Tom Lewis brought to this office an orange weighing two (2) pounds, grown by W. J. Wilson, a preminent orange grower and vineyardist of Newcastle, Placer County, who has used Tom Lewis' Fertilizer for four seasons and swears by it.—FROM SACRAMENTO EVENING STAR, DECEMBER 23, 1904.

Office and Works, 1916 and 1918 10th St., Sacramento, Cal.

WALNUT TREES grown from carefully selected seed

I have a fine lot of trees. Call and see them. Postal gets price list. ***A. A. MILLS, Anaheim, Cal.***

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IF YOUR DEALER DOES NOT CARRY
"MOCOCO"
FERTILIZERS.
order direct.
Pamphlet and Price-List free. on application.
Accept no substitute; insist on having "MOCOCO"

THE FRESNO NURSERY CO.

INC. CAPITAL PAID UP, $50,000.00

Can Fill Your Orders for

GRAPE VINES GRAPE CUTTINGS
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FRUIT TREES OF ALL SORTS

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P. O. Box 42
FRESNO, CALIFORNIA

Rooted Vines

Emperor, Malaga, Tokay and Verdel. Limited Quantity.

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Strawberry Plants TROPICO BEAUTY BRANDYWINE

$2.00 per 1,000, f. o. b.
Lots of 20,000 or more, $1.75 per 1000, f. o. b.
Lots of 100,000 or more, $1.50 per 1,000, f. o. b.
For Sale by the Grower,

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THE VERNON NURSERY

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A Good Stock of First-class Seedling Soft-shell Walnuts yet on hand.

Phone: South 1105 A. YARNELL, Prop.

Deciduous Fruit Culture

By J. W. MILLS

THE HOME ORCHARD.

IN ONE sense, the home orchard is the most important part of the farm, because it is a part of the home. It is, however, sometimes the most neglected part of the place because it brings in little if any cash, but it saves cash and furnishes comfort and good things to look at and eat. These prerequisites are not always sufficiently appreciated.

Unless there is an abundance of land that may be used for the purpose, it is a mistake to cover too long a list of fruit trees. One tree of each of a few of the best varieties selected so as to follow one another in ripening, even if there is an occasional gap between ripenings, is better for a small lot than to have a long list crowded together.

Trees may be planted closer together in the home orchard than in a commercial plantation, say sixteen feet should the area be limited, but when land is no object, twenty feet is better. Where the space is limited, it is better to plant large and small growing varieties alternately. For instance, apples and peaches may be so planted. The peach is a short lived tree and the apple, besides living to a good old age, spreads out and occupies considerable space when comparatively young. After the peach trees have passed their usefullness, the apples will occupy the space.

Apples and pears are often grown as dwarfs for the home orchard. Pears are dwarfed when grafted on quince stock. Paradise stock makes a dwarf apple tree and Doucine makes a half dwarf. Paradise stock is much liked by woolly aphis and is undesirable on that account. However, if Northern Spy apple is grafted into the Paradise and the variety desired onto the Northern Spy, good results should be obtained. Apple trees are pruned to root above the graft if set with the union below the surface of the ground. I consider this a good combination for trees in a home orchard, for quick results are obtained. Quite a quantity of apples and pears will be had the second summer and if the trees are planted with the union above or below the surface, they will eventually develop into standards, and in later years make large trees. After the Northern Spy stock developes, becomes well rooted, the dwarf roots may be cut out and thus remove posible bait for the woolly aphis.

Grape vines are grown to advantage as an arbor or on a fence. Berry bushes should not be grown against a fence as it is difficult to gather the fruit from one side of the row.

A good selection of fruit for a lot that would accommodate a dozen trees, would be as follows: One Red Astrachan and one White Winter Pearmain apples, one Lawson and one Easter Beurre pear (of course Bartlett is the best pear, but it is too subject to blight to be risked for the small plantation.) Tragedy Prune and one Wickson or Kelsey plum, one Royal apricot, one Stanwick nectarine, one Admiral Dewey and one Lovell peach, one Angelique fig and one Placentia walnut. This makes one dozen trees that will give fruit all through the summer. There are excellent eastern varieties of peaches that are not for sale by California nurserymen, but can be had from some of the eastern nurserymen. Some of the nurserymen at Glen St. Mary in Florida have them for sale. Some of these are Large Early York, Coolges' Favorite, Mountain Rose, Honey and various other kinds. These peaches far surpass the standard varieties of yellow peaches. There is no better flavored peach than Stump the World, or Belle of Georgia, still they will not do for a market peach as they will not carry. Chinese Cling and Old Mixon Cling are much higher flavored than any of the yellow varieties of canning peaches, but they will not do for the trade as they have a bad color imparted by the red flesh near the pit. The former is a shy bearer, the latter very prolific. These clings have a nutty flavor not found in the yellow clings. None of the white freestone peaches have good market qualities as they are too delicate in flesh to stand handling that market varieties require. They are also much more delicate in flavor and this is why they should be used in the home orchard.

For a home orchard of considerable size, an unbroken line of peaches may be had from the following varieties. Admiral Dewey, Amsden's June, Large Early York, Early Crawford, Foster, Coolege's Favorite, Lovell, Belle of Georgia, Stump the World and Salway.

Plums from May to October, are Chevy Plum, Rivers' Early Prolific, Tragedy, Bartlett & Wickson, Kelsey, Sultan and Rien Claud Bavay.

Apples, Early Harvest, Red Astrachan, Duchess of Oldenburgh, Rhode Island Greening, Yellow Belle Flower, and White Winter Pearmain.

Newcastle, Tilton and Royal will supply apricots through their season.

Figs from late in June till January will be supplied by Gros Gris Bifer, Angelique, Mission, White Datatto, and Verdal Longue.

I have not mentioned cherries as they are counted out in the valleys of Southern California. Experiments scattered over a wide area show that there are not to be relied upon and in fact are a decided failure.

One Smyrna quince, one Hachuja and one Hyakume persimmon, one Spanish Ruby and one Wonderful Pomegranite, one Advance loquat, one Lewellings Porlific and one Languedock almond, one Stanwick nectarine, one Santa Catarina and one Mission olive will complete the list that will keep the family in fruit throughout the year. I have not mentioned citrus fruits as they are all common to us. A St. Michael orange may not be out of place in with the Washington navel and Valencia.

A good list of grapes is Chasselas Rose, Blue Portugese, Black Malvasay, Cinsaut, Purple Damascus, Muscatello fino, Muscat, Olivette, Verdal, Tokay, Cipro Hero, Golden Queen, and Black Morocco.

WINTER INJURED TREES.

A number of inquiries have come to the station from a few fruit growing districts in New Mexico in regard to the treatment for winter-injured fruit trees. The sudden and severe cold spells during the earlier part of the winter found a "number of apple trees not ready for winter" in the eastern part of the territory.

Excessive cold is likely to injure trees and especially if the young growth has not properly matured durthe fall and early winter. The more thoroughly matured and dormant the plant, or part of the plant, the better it is able to endure severe cold. Fruit growers in the colder parts of the territory should see that the new wood is thoroughly matured before frost come. The wood can allowed to mature by lessening the activities of the tree in the fall. This is usually done by stopping cultivation and irrigation at the proper time. Cover crop, also, tends to mature the young tree growth.

While the proper treatment for winter-injured trees is often determined for each particular case, it is true that the injured part is no longer of any use to the tree, vine, or plant, whereas it may cause positive injury by accelerating the evaporation and dying back of the frozen parts, or by affording lodging places for insects and germs of plant diseases. Probably the best treatment for trees and vines that have been winter-injured upon the new growth or extremities is to cut them back as much as necessary. The severity of this operation, which may be 3 to 5 feet, depends upon the injury. The removing of these dried and injured tops concentrates the energy of the tree into a smaller area. It is to be remembered that heavy pruning always tends to produce vigorous new growth and this new growth is much needed in winter-injured trees, as the vitality of the trees may be renewed. The injured wood can never perform its former function in the growth of the tree. New wood must be developed as soon as possible in order that the tree may maintain its vegetative forces.

Make Money

Growing Eucalyptus Trees. We can supply the following varieties in quantity:

E. Globulus
E. Rostrata
E. Rudis
E. Corynocalyx
E. Tereticornis
E. Polyanthema

Our New Illustrated and Descriptive Catalog for 1907 sent to any address for a two-cent stamp.

Armstrong Nurseries
Box 114, Ontario, Cal.

Berry Plants

Raspberrry Plants -	$6.00
Brandywine - -	1.50
Aroma B - - -	1.50
Senator Dunlap - -	1.50
Klondyke - - -	1.50
(Improved) Lady Thompson	1.50

All plants fresh from the east last spring, and were raised on virgin soil. Write for prices on 100,000 lots.

A. E. HARRINGTON
R.F.D. 6, Box 37 Los Angeles, Cal.

Strawberry PLANTS

Headquarters For The
Burbank Beauty

A real beauty and the earliest and most vigorous of all strawberries. A good table berry and will ship further than any other berry. $3.00 per thousand.

Brandywines—The old standard variety of the southwest. Can fill orders by the thousand, hundred thousand or million. $2.00 per thousand. Plants carefully packed and we guarantee their arrival in good condition.

FAIRVIEW FARM NURSERY
G. H. HOPKINS, Prop BURBANK, CAL.

Grape Vines **Apple Trees**

50,000 Rooted Muscat, Sultana, Tokay, Concord
10,000 W. W. Pearmain, Winter Banana and Assorted.
Deciduous, Shade and Ornamental Trees, Elm, Maple, Umbrella, etc. Old-fashioned Flowering Shrubs, Weigelia, Lilac, Snowball, etc. Write for prices.

Pioneer Nursery **Monrovia, Cal.**

Trees

Early Crawford, Hale's Early and many other varieties of Peach trees; all fine budded stock.

Large stock of all the leading varieties of Apples, grafted on whole roots and free from all pests. Also a fine stock of Cherries, Pears, Burbank and S.B.S.S. Walnuts, etc. Send for price list.

A. F. Scheidecker, Sebastopol, Cal.
Prop. Pleasant View Nursery.

Strawberry Plants

150,000 Brandywines
200,000 Klondyke
and a few Arizonas

All First-Class Plants

Chas. A. Grafton, Covina, Cal.

Early Cuthbert Raspberry Plants

I have Twenty-Five Thousand Early Cuthbert Raspberry Plants to sell at Six Dollars per Thousand.

L. D. Woodworth, Covina, Cal.

STRAWBERRY PLANTS

800,000 Brandywines
400,000 A1
20,000 Pride of Michigan

All grown from Kellogg Stock and guaranteed First-Class Plants. Write for prices.

F. P. BALDOSSER, Covina, California

Lady Thompson Strawberry Plants

$1.50 per Thousand

M. J. Rooks - Azusa, Cal.

When writing advertisers mention Cultivator

Sometmes the heavy cutting back of winter-injured trees seems to do more harm than good, but the death of such trees would have occured even of they had not been cut back. These are cases where the entire tree has been injured.

All the injured wood should be cut off and the pruning should extend down to the uninjured part. The wounds, especially if they are any ways large, should be properly covered with some kind of dressing. Paint and tar are good materials.

There seems to be a variety of opinons in regard to the best ti of the year to prune the winter-injured trees. Some prefer to wait for the starting of the buds, rather than prune earlier in the spring. Others prefer to prune in the spring before the buds open. However, it is believed that where zero weather is not likely to prevail that as good results may be had by dong the pruning shortly before the leaf buds open in the spring.— Fabian Garcia.

TOP-WORKING PECANS.

Interest in the pecan industry is steadily increasing, not only in our own state, but in others as well. Since the writer has visited many pecan groves of the state during the fruiting season, and has been forcibly struck by the fact that very large numbers of small, inferior nuts are produced. This is not as it should be, and the fact that such is the case is but proof of planting nuts or seedling trees. These are seedling groves and doubtless they are the outgrowth of the very best selected nuts. True, a considerable proportion of seedling trees produce good, sizable nuts, but scores produce inferior nuts, but little larger than chinquapins, and it is a fact which cannot be gainsaid that the seedling pecan, up to the time of fruiting, is an unknown quantity, after which it is too often a disappointment. It is not necessary to say that such trees are unprofitable, and the question naturally arises, what is to be done with them? Only two answers can be given; one is, cut them down and plant budded or grafted trees of desirable varieties. The other is, top-work them. It is needless to say choose the latter, but do not work over all the trees in the grove simply because they are seedlings. Those which produce a goodly quantity of marketable nuts should by all means be allowed to remain; top-work the remainder.

"LET US IRRIGATE."

In Jan. 3rd, Cultivator, page 23, is an article; "Wealth in Irrigation," in which the writer says. "In the San Joaquin valley no irrigation has been developed and the land is planted to vast fields of wheat, resulting in an entire lack of settlement of the valley."

This statement shows the writer is grossly ignorant of present conditions in this valley. It is true we have large fields of wheat, of which we are justly proud, but the hundreds of thousands of acres of irrigated vineyards, orchards and alfalfa, under the best and cheapest irrigation system in the state, most of which is owned in small ten, twenty and forty-acre tracts, on which thousands of happy and prosperous families make their living, the great citrus belt on the east side of the valley in Fresno and Tulare counties, and the many rapidly growing cities and towns in the valley, are the pride of everyone who is broad-minded enough to be a Californian. If the writer of the article will take a trip through this valley, though he be a Missourian, I believe he can be shown. —W. E. Thompson, Oleander.

The article above referred to, was a condensation of one written by a government employee a few years ago when conditions were not quite so favorable to the part of the state where our correspondent lives, at least in regard to intensive farming and irrigation. Then, too, the author is only speaking in a comparative sense and was but making the point that irrigation had practically reclaimed the south from a desert and that nowhere else in the state was it properly appreciated. We are pleased to publish the writer's well-taken correction regarding one of the choicest sections of our great state and the "irrigations" are "on" the Cultivator.

Largest National Bank West of Denver and South of San Francisco

First National Bank

United States Depository for Government Funds

TOTAL RESOURCES, $20,000,000

ADDITIONAL ASSETS—One Million Five Hundred Thousand Dollars invested in the stock of the Los Angeles Trust Company and the Metropolitan Bank and Trust Co., and held by the officers of the First National Bank, as Trustees, in the interest of the shareholders of that Bank.

We are prepared to extend to the small depositor the same personal and careful attention that we do to our largest accounts.

Fertilizers and For Profit Fertilizing

The California Fertilizer Works' Fertilizers are highly recommended by several members of the Tulare County Citrus Fruit Exchange, Fresno vineyardists and all others who have used them, for having given **grand results** and **profits.**

Office Of The
California Fertilizer Works
Corner 11th and Market Sts. San Francisco, Cal.

Walnut Trees

Come and Let Me Show You the Best Trees on the Market

Seedlings—Several Thousand grown from the very best selected, hand picked by myself from grafted trees. Placentia Perfection and Santa Barbara Soft Shell. **Grafted Trees**—500 Placentia Perfection, extra selected and absolutely guaranteed.

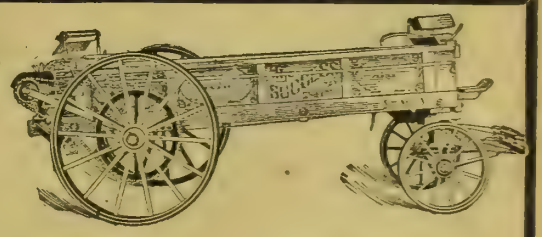
CHAS. A. HAMBURG, Proprietor. Established 1887 by Present Owner. Home 288. **Whittier Nursery, Lock Box 666, Whittier, Cal.**

Rich Farm Lands

Alfalfa, Sugar Beet and Fruit Lands from ***$25.00 an Acre Up.*** Splendid opportunities for dairyman, in one of the choicest sections of California, where climate, soil and water combine to produce most desirable results. Corcoran, the new and rapidly developing town, is the capital of this rich section. For particulars address

Security Land and Loan Co. *357 South Spring Street Los Angeles, California*

Don't buy a Manure Spreader —without seeing it.



And after you have seen it, inquire into its record. Ask some practical man who has used one what he thinks of it. Ask him—

How long he has used it?—What it has cost him for repairs?—Whether it is easily operated?

The Success Manure Spreader

is the result of 28 years' experience in making spreaders, during which time every new device has been tested and those of merit adopted.

There's nothing startling about the Success,—just plain proven worth all the way through.

These points of construction indicate its genuineness

Largest of axles, we've tried smaller ones

Tough second-growth white ash frame—no other wood is as good

Beater braced to axle with steel shaft, throwing strain on axle instead of end of body.

Apron on three series of stationary rollers. No chance to bind.

Harpoon teeth on beater. (New feature) Keep beater ends clean.

Apron returns in driving 65 feet after load is off.

Spreading Mechanism absolutely locks in or out of gear. No racing of Apron in going up or down hill.

Our special book on Spreaders will help you. It presents plainly and truthfully the facts in reference to Success Spreaders. Write for it before you buy but, most important of all, ask some one who has used a Success.

KEMP & BURPEE MFG. CO., Syracuse, N. Y.
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Town, Country and Suburban Homes

Can enjoy even Better Lighting Facilities than the city affords by using

Perfection Acetylene Generator

The only machine having a perfect feeding device. The only machine sold on trial to responsible parties. No matter what your experience has been with other machines, you can try this machine with out money until satisfied. All machines sold with a positive guarantee.

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Agents Wanted in All Parts of U. S. Write for Particulars.

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MILK CANS

Write us for prices on the **Buhl** sanitary **"Glass Finish"** Milk Cans, all sizes. We have the largest stock on the Coast and our prices are the lowest.

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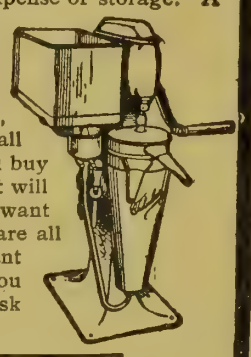
50% MORE CREAM

DON'T PAY

The old pan way of raising cream don't pay—it's too mussy and fussy—too much work for the women. And it don't pay in dollars and cents because you actually lose 50 per cent of the cream you ought to get. You can increase your cream product about 50 per cent over pan setting; 33 per cent over cans set in cold water; 25 per cent over patent creamers or dilution cans by using the

SHARPLES TUBULAR SEPARATOR

Besides you can skim the milk immediately after milking—save the handling and the expense of storage. A good milk-house costs more than a **Tubular** and isn't half so profitable—even if you already have the milk-house it will pay in labor saved, in crocks and pans saved, and the increase in cream will be all clear profit. Of course, when you buy a separator, you want the one that will get you the most profit—you'll want the **Tubular**—the **reasons why** are all given in a book which you will want and which we want to send to you **free** if you will only write for it, ask for book H. 260



THE TUBULAR WAY

Mr. Mac Tuttle, Danville, Ill., says "The first week we used the Tubular we made a gain of 12 lbs. of butter from five cows."

THE SHARPLES SEPARATOR CO.,
Toronto, Can. WEST CHESTER, PA. Chicago, Ill.

Southern Chief DISC PLOWS

Built with Special Reference to the Requirements
:: of PACIFIC COAST Farmers and Orchardists ::

These plows are made entirely of steel, malleable and cast iron. They are well braced, strong and easily controlled. The three disc can be converted into a two disc, and the four disc is easily changed into a two or three disc. A farmer having a two disc can make a three disc by securing the extra parts.

LEVER RODS SLIDE THROUGH ADJUSTABLE CONNECTIONS
Keeping the Levers and Operator Always in the Same Relative Positions.

The location of seat, wheels and hitch are right, giving good penetrating power and permitting of turning to either right or left. The front wheel is under control at all times and the plow can be steered at will.

The Orchard Axle Attachment

with which either size of these plows can be equipped is a splendid thing for orchard plowing, and especially where it is desirable to work up under the branches close to the trees.

Permits of Closer Work than Can be Done with a Walking Plow

The plow with this attachment can be used for general work as well as for orchard plowing.

Made in Two, Three and Four Disc

SIMPLE WITHOUT SACRIFICE OF STRENGTH, AND THE QUALITY OF WORK CANNOT BE EXCELLED BY ANY DISC PLOW AT ANY PRICE

All levers are convenient for the operator, easy to control in raising or lowering plow and for guiding purposes. The bearings are long and made of chilled cast iron, insuring wearing qualities. The foot trip for rear wheel permits the plow to turn either way, and also serves as a raising lever. The method of raising and lowering front furrow wheel is sure to be a source of delight to the operator. It does away with the inconvenient lever in **general use**, which is usually too **long** on a **two disc** and too **short** on a **three disc**. The elasticity of the spring board hitch relieves the plow of dead shock and severe strain.

ASK YOUR DEALER TO SHOW YOU THESE PLOWS

Send us your name and address, enclose four cents in stamps to pay postage and mailing and we will send you our Flying Dutchman Song Book and Junior Catalogue Combined, containing Twenty Old Familiar Songs with words and music.

MOLINE PLOW CO., MOLINE, ILL.
Makers of the Famous Moline Plows and Other Flying Dutchman Farm Tools, Mandt Wagons and Bob Sleighs, Light Running National Manure Spreader and Henney Buggies

When writing advertisers, mention Cultivator.

Live Stock and Dairy

By Mrs. Minna E. Sherman, Fresno, Cal.

DIGESTION OF THE COW.

GREAT individuality in a cow is not desirable, except it is toward higher production.. If the time ever comes when a cow's disposition and personality is carefully considered and every thing she does not like kept away from her; if she is placed under ideal conditions, if her nerves are considered as race horse men consider a horse, then we will see some marvellous records made of butter production. This will be expensive but it will be practical work, not sport, as the race horse is the least useful and most degrading of all horse flesh to his human associates, while the making of a great butter or milk record is a distinct advance of the breeder art, even if the common milkman can never hope to reach the mark.

The building up of a herd of cows has more than the amount of butter fat to consider, the cows must have health or their milk is not saleable. Health can be carefully bred and carefully cultivated. What regularity of habit does for the human race was never so well set forth as in the experiment made by Prof. Wiley, in Washington, along the line of the pure food work. In this case the young men were fed on the food well prepared and given with it a capsule containing the usual amount of preservatives used by the canners and meat men. The young men were selected as those whose honor could be trusted to eat nothing away from the diet table. The experiments were expected to prove conclusively that digestion is greatly disturbed by the use of preservatives, that regular eating, of correct amount of nutriment according to the physical requirement of the individual is the one thing needed. The men did not show the bad effect expected. The regular well prepared food, right in its amount, actually came very near to off setting the drugs fed with it.

Whenever we take to breeding cows by the Babcock test alone, not considering the animal as an animal, whether it is in balance, with proper heart, lungs and stomach, to carry on the functions of its life, as well as to produce milk and transmit health to the offspring, the danger line is reached. The building up of a herd of cows has to be considered from all sides, or else the old story of tuberculosis comes in, and the cows valuable as heavy fat producers today, are tomorrow worthless.

That tuberculosis is contagious, not inherited, is nearly a sure fact in the minds of the scientific men of today.

Home of Bacillus.

The home of the orignal bacillus is now thought to be in the hay fields, but now become so generalized that it abounds everywhere man is found. The Bangs method of raising a healthy herd from the diseased cows, by removing the calves as soon as dropped by the reacting cows, is being carried out, removing them as completely as the Spartan did the child from their parents, and rearing them on sterilized milk, to make them healthy. This under trial for a period of years, has demonstrated itself as far as eliminating tuberculosis is concerned, to be successful. I wonder if the calves produced by cows in advanced stages of the disease have the same sound nervous system as the calves born of healthy cows?

Nerve Force of Cows.

The nerve force of the cow is shown in her increasing milk secretion. A cow without nerve force is not a heavy producer of milk. Study this difference at the next agricultural fair by examining the beef and dairy cows. The only vital difference that you can see is that the one has every appearence of nerve force and would stand up under trial. The cow has the look of grit. While the sleepy beef cow looks as though the hardship would quickly kill her. She has not the ginger or vital force to take hard usauge that is written on every line of the expressive face of the dairy cow.

Nerve strength is balance. It does not mean the easily frightened cow or the vicious one, but a calm, clear eyed reflective look that measures quietly the sources of danger before moving out of the way. The milking machine will weed out the cow of peculiarities, the merely cranky one, for it is unyielding. The human milker made allowances. The cow must now come to time and any Zantippe like conduct will bring her to grief, when the Babcock tests her milk. Nerve force in the cow means continuous results in the milk pail. The flabby cow may like the flabby man, run well a short race but nerve force in man or beast means effectiveness. The Zantippe cow like the Zantippe women, must not be excused but must be eliminat-

Standard Reached.

Cow feeding has been standardilzed by taking a large number of herds and studying the results of ration feed. The amount that it was profitable to feed was thus arrived at. This is the scientific way of feeding. Many dairymen do not believe as yet in it, but do believe in the "cow sense" of their cattle. They believe the cow knows when she has had enough of one feed, and that the kind she prefers is the kind she should have. They believe that cow instinct cannot be improved upon in any way. Now if the cow could be further educated to read the market reports and use the cheapest foods to produce a pound of butter we might trust her with the feeding business. We also know if we should buy her all the different feeds that are mixed for a ration and spread them out, allow her to come in and eat what she liked best, that the oil cake would go first and a very sick cow would be the results.

The idea of cow sense comes from ignorance, it is surprising how ignorant people can be of what they see every day. I have never asked an audience of dairymen how many pound of hay their cows ate at a meal and had them tell me correctly? They guessed each cow ate so much. The chances were, if those men weighed the hay, they spread out before the cows and the amount the cows leave that they would find the cows were over fed on grain, for the cows will take grain and leave hay or roughage. This goes on until the cow is being fed too expensively and wastefully.

Know positively that the cow is taking two-thirds of her available nutriment from the coarse fodder, hay, corn stalks and silage are considered as roughage. Nearly all the cow udder and digestive troubles come from a failure to recognize this fact. Do not guess but weigh the hay and grain for several days and see how nearly right you are feeding. In weighing, weigh all the cow leaves uneaten, cut out the grain feed until she eats the hay portion completely. I do not believe you will ever regret the labor, for the cow will give as much milk at a decreased cost. The knowledge gained will not be the least part, for instead of having a cow off her feed every now and then, the cow will be little trouble and keep in good health all the time.

HOMOGENIZED MILK.

The great importance of cows' milk for human food is being advanced by new methods of modifying its composition. One of the most recent inventions is that of homogenizing milk, a process by which the fat is put into complete emulsion with the milk serum. In plainer words, the little butter fat globules which exist in milk and vary in size from one five-thousandth to one twenty-five-thousandth of an inch in diameter are broken up into

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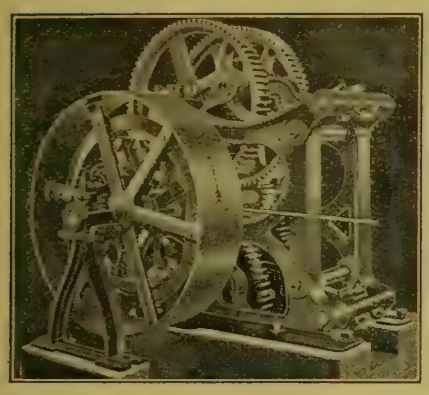

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They do not hammer out your pipe line by irregular pulsations of the water column.

They save power by keeping the water in continuous motion.

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They are fitted with improved oiling devices that can be filled without stopping. Pumps may run for weeks continuously.

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Pomona Manufacturing Company

Makers

Pomona, California

still smaller globules and thus form an emulsion which will not separate by gravity or centrifugal force. The homogenizing of milk is a simple process by which it is forced under high pressure against a hard surface, causing the fat globules to be broken up into extremely small particles. A pressure of from five to six hundred pounds to the square inch is required and the streams thrown are about the size of a pin point. Milk which has been thus treated will not cream or even churn, but remains constant with whatever per cent. of fat it may contain. It is claimed that homogenized milk is more easily digested than that untreated.

Queries

Citrons for Feed.

Please answer.—Are citrons good cow and hog food?

I know one farmer who says they are fine feed for milk cows ,and that hogs fatten readily on them, while the man on the adjoining farm, claims he would not feed them unless he was short of water, as that is all there is to them.—G. A. O.

Succullency added to dry feeds by any means increases the milk flow in cows. Corn sileage, actual chemical feeding value, does not indicate the value it has when fed to a cow. Citrons have little food value chemically compared to grain. The one neighbor who fed the citrons with plenty of grain and dry feed found them of great value in assisting the cow to make use of the nutriment in the grain. He increased the assimilation. The other neighbor probably fed them straight or without sufficient grains, and as he says, found that they were little better than water.—M. E. S.

Swelling Near Navel

I have a large Durham cow about eight years old that has a large swelling just in front of her udder and back of the navel. It is about the size of a 5-pound lard pail; quite hard, but doesn't seem hot or feverish, but is quite sore. It came during one night about two months ago. There was nothing to indicate a hurt of any kind. She was kept in stable during the night and turned in a yard during the day. While in the stable she had plenty bedding. She is kept alone as I haven't any other cows. She shows signs of being in pain. We have bathed it in soap and water and have used turpentine and olive oil quite faithfully. Can you tell me what is the trouble and the best treatment to give for relief? Any assistance you may be able to render me will be very thankfully received.—R. H. R., Elsinore.

This lump should be examined carefully to see if it is a hernia, I have had two cows strain themselves and produce rupture. This was cured in one case by cutting through the skin and pusning back the bowel, then sewing the break up with silver wire. The cow was kept bandaged to prevent further trouble for several months. The other case the hernia was softened with hot water and the cow having been thoroughly physiced the day before and left for twenty-four hours without any food, so that the bowels were practically empty. A large pad of felt was cut and fitted to hold the hernia up, then a web surcingle was strapped closely over the pad. This answered for six months the cow was fattened and dressed for beef. This lump may come from cold, or from lack of regular or clean milking. I have seen cases of it occur where cows were dried off when the milk flow was too great. In these cases we try to suppress the milk flow by using spirits of camphor to bathe the udder. Give Epsom salts every other night in pound doses with a tablespoonful of ground ginger added. Give this for one week. Give alfalfa hay and bran, no other grains, green grass in limited quantities only. If this lump is going to abcess, it will in all probability spoil the cow as a milk animal as it is probably directly in the way of the milk veins.—M. E. S.

Slobbers.

Can you, through the columns of the Cultivator, give me a remedy for a horse that slobbers?

I have only had him a year and a half, so do not know whether he has

Now is the time to go for gophers with **Bille's Gopher Poison.** The gophers go for it and it will go for them good and plenty every time.

This is a photo of 201 killed in one day on a ten-acre field before they could get back to their holes, wi h one bottle of

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Endorsed by Agricultural Colleges and Experiment Stations. Not one of the ordinary poisons, but in a class by itself. Has had greatest success in the Middle West. The secret being that it is most attractive to gophers, squirrels, etc., and sure death to them. It gives the grain a glossy coating, retaining the poison for weeks. Hundreds also die in their holes by eating it there. We have bought the patent rights for this section and are selling at the eastern price of $1.25 for large bottle. The ingredients cannot be bought at a drug store for that price. Money refunded if not as represented—so printed on the bottle. If your dealer does not keep it, send $2.50 for two bottles, express prepaid by us. Any way send for circular with affidavit of above killing and a few out of many testimonials.

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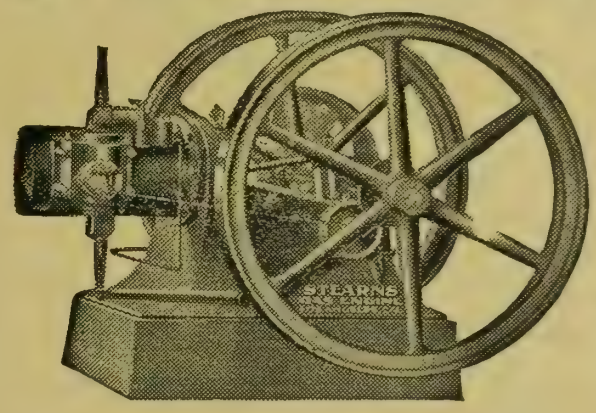

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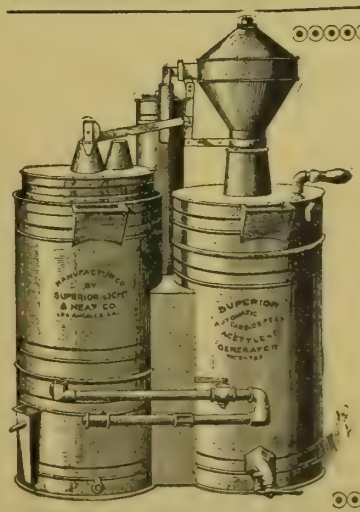

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Fine young Bulls, by a magnificent son of Golden Ferns, had out of imported cows. Also a bull calf out of a daughter of Golden Lad by a son of Golden Lad, making him 50 per cent. Golden Lad. We sold his full brother to the late Gen. Shafter, who won in every class he showed him in at Sacramento in 1905. Will sell at low prices considering breeding, to make room for new stock.
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Is making the very best strains of blood fresh from the island of Jersey a specialty.
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A safe, speedy and positive cure for
Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.
As a **HUMAN REMEDY** for **Rheumatism, Sprains, Sore Throat,** etc., it is invaluable.
Every bottle of **Caustic Balsam** sold is Warranted to give satisfaction. Price **$1.50** per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address
THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

Imported Clydesdale and Hackney Stallions
I sell better stallions for less money than any man in the State. Can sell you a good stallion for $1,000
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Young Stock For Sale.
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For Sale
Sargent Fox, 64833 A.J.C.C.
Bred in Jersey Son of Flying Fox
Heifers by this Bull are now coming fresh, and prove him to be a valuable sire. His get are better producers than their dams, and are greatly improved in type. As our herd has been practically closed out, this bull is for sale.
Leffingwell Rancho, Whittier, Cal.

Make Dairying Pay
Just consider the part the cow takes as a producer for the farm. She not only furnishes in milk many times her own weight in a single year, but reproduces herself annually, and her off-spring is either sold to the butcher or raised to go through the same process of production for perhaps twelve or fifteen years to come. But to keep cows or run the dairy requires care. You can't have milk without furnishing its equivalent—feed. And the skillful dairyman will carefully increase the ration for his cows until he finds the limit of each animal's digestion. At this point is where the profit lies.
Difficulties, however, are often encountered in arriving at the digestive capacity of a dairy cow. Going off her feed, Indigestion, Milk Fever, Mammitis are the consequences, but where the proper tonics are administered the digestive organs are strengthened and improved and the largest possible amount of food is digested and converted into milk.
DR HESS STOCK FOOD A TONIC
is the medicinal stock tonic and prescription of Dr. Hess (M. D., D. V. S.). Is especially designed to make cows give more milk, market stock grow faster, horses do more work, and to relieve minor stock ailments. It is not a food in itself but makes all the food of the farm produce more milk, more meat and more work.
Professors Quitman, Winslow and Finlay Dun, the most noted medical writers of the age, tell us that bitter tonics improve digestion, iron makes blood and the nitrates assist nature in expelling poisonous material from the system. Such ingredients make up Dr. Hess Stock Food—Isn't this pretty strong proof? Sold on a written Guarantee.
100 lbs. $7.00 25 lb. pail $2.00
Smaller quantities at a slight advance.
Where Dr. Hess Stock Food differs in particular is in the dose—it's small and fed but twice a day, which proves it has the most digestive strength to the pound. Our Government recognizes Dr. Hess Stock Food as a medicinal tonic and this paper is back of the guarantee.
Free from the 1st to the 10th of each month—Dr. Hess (M. D., D.V.S.) will prescribe for your ailing animals. You can have his 96 page Veterinary Book any time for the asking. Mention this paper.
DR. HESS & CLARK, Ashland, Ohio
Also manufacturers of Dr. Hess Poultry Pan-a-ce-a and Instant Louse Killer. Instant Louse Killer Kills Lice.
THE PETALUMA INCUBATOR CO., Petaluma, California, Pacific Coast Distributors.

always been so. He is now thirteen years old, is of a "boney" build, so never looks real fat, but at times gets in quite good order ,then takes a spell of slobbering, which lasts several days. His hay will be as wet as if a pail of water had been thrown on it and smells badly. He then looks very thin and stumbles. He stumbles some at other times, but always worse when he has one of those spells. He does not go lame. He is fed mostly on tame oat hay.—S. J. L. San Diego.

The teeth should be looked at by a qualified horse dentist. It pays will to keep the sharp points of horses teeth filled smooth. It also pays to fill any teeth that are decaying with amalgam fillings. The bad smell would indicate nasal discharges. These are hard to cure in a horse, with them there seems to be headache and the eye sight is affected slightly. The horse lacks ambition, will not pick up his feet and blunders along the road. I had a work horse that became offensive in the stables, he was tested with malin, but did not react, therefor we did not fear glanders. He was bad enough at times to pitch headlong on the road. I had him humanely destroyed, the bones of his skull were softened and the nasal bones were decaying.—M. E. S.

Scours.

I have a horse that is bothered some with scours and would like to have you give me a good remedy. Have had his teeth fitted up and have fed two or three kinds of condition powders. He has been fed on alfalfa hay, oat hay, and barley, but it seems to be the same in all feeds.— C. B. S., Weston.

The scours are often only a sign indigestion. There is a type of potbellied horses greatly given to scouring—every drive—give a drink of water and the horse scours. The best thing I know of it to avoid buying this style of horse. The next best is to add a teaspoonful of bi-sulphate of soda to the grain feed. Make him eat slowly, by putting a number of common round boulders the size of a man's fist into the feed box. He cannot then grab his food and bolt it by the mouthful, but must roll the boulders around and take the grain in little nips. Avoid giving him a large amount of water at one time, water often and not too much at a time.—M. E. S.

Scours.

I have a horse nine years old that scours very badly, water running from his nose most of the time. He has been in my possession one month, former owner claims the horse never scoured while he owned it, although he fed it very poorly and worked it hard. I am feeding it good, clean oat hay, and four quarts of middlings and shorts mixed, each day. What can I do for it?

Have the horses teeth examined and floated if necessary. Try rolled barley and coarse bran instead of middlings and shorts. Water before feeding; giving no water for at least two hours after feeding. This in most cases affects a cure. If the horse should still continue to scour give tablespoonful of willow charcoal and powdered chalk, once or twice a day.—W. J. Oliver., V. S.

Bloat.

I have a cow that bloats quite easily, and we have to be very careful about feeding and watering. What will I give her when bloated? Can I give her treatment that will prevent bloating? Please advise through the Cultivator. —E. S. F. Redlands Cal.

This cow should have baking soda, a teaspoonful to a tablespoonful night and morning, then feed her easily digested food. A little oil cake acts admirably in these cases, a handful in each feed; it pays also a good return for the money invested .

Common Sense In The Hennery.

The American hen is the greatest bird in the world. All the gold and silver mined in a year, added to the value of sheep and wool, doesn't equal the money worth of poultry products Biddy produces in 365 days time. That sounds big, but it's a big fact and can't be expressed in small figures. If it's hard to believe, take the same truth in another way. Think of a railway train 900 miles long, composed of 107,813 cars. Well! If all the eggs produced on Uncle Sam's farm in one year were packed into crates containing 360 eggs each, it would take just such a train to transport them all between any two points. Now, what about our hens? Nothing small in the poultry industry is there? No, there is not, and if every man with a hen used Dr. Hess Poultry Pan-a-ce-a, giving a small portion every day in soft food, the business would be far more colossal than it is. Pan-a-ce-a is the key-note of success in poultry culture.

Some breeders, crusted with barnacles of old traditions and prejudices, think hens and corn are the only two things necessary for making money out of eggs, Some, again, think there may be something in the "tonic idea" but lack sufficient faith to try it. And in the meantime, while these men are growing poorer, thousands of others, with a full knowledge of what hens require, are giving Poultry Pan-a-ce-a and coining money. Poultry Pan-a-ce-a is not a stimulant. It doesn't force the hen to a short period of large production, only to leave her exhausted for a longer time.

Poultry Pan-a-ce-a gets at the root of the trouble in another way. It makes the hen feel natural when her whole environment is contrary to nature. If at liberty to scratch and forage at will, she would find in Nature's lavish providing most of the things she needs to providing most of the things she needs to promote the healthful activity of every organ. But, being restricted in range, she needs Poultry Pan-a-ce-a to take place of nature's providing by taking food available, and by strengthening and assisting the digestive process till the largest possible amount of nutrition which nature can use is wrung from the food eaten, and directed into proper channels for building healthy flesh or producing eggs. This statement of fact is not overdrawn—unless a preparation of this kind is given.

The truth of all this is sufficiently evident in the number of deserted and abandoned "coops" one sees about the country, where people have literally killed the hen which laid the golden egg by requiring the impossible and unreasonable. Dr Hess and Clark (who make Poultry Pan-a-ce-a) are so well assured of the real value of the compound, that they back it with their personal guarantee—no profit from using Pan-a-ce-a—no pay. If you try it and are disappointed, you get get you money back, that is their offer.

Very likely your dealer has Dr. Hess Poultry Pan-a-ce-a; if not a postal order will bring it. Thousands more are using it this year than ever before. Try it yourself—get in line for prosperity.

"Is she able to get money from her husband without asking for it?"

"Yes, but she had to divorce him in order to accomplish it."

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fere Outfits See O. J. Weder Co., 555-557 So. Los Angeles St., Los Angeles.

The Vegetable Garden

By ERNEST BRAUNTON

NEW STRAWBERRIES NEEDED.

OUR LEADING strawberry growers tell us we have need of other berries to supplement the well-known Brandywine in-as-much as that popular berry will not furnish us with fruit at all seasons of the year and is not always of good quality when available.

That the Brandywine is not a good early berry is conceded by all. During the early part of the season down to April it remains green and hard on one side, seeming to need a warmer atmosphere for perfect development and ripening.

We have lately seen two berries that would appear to be coming into favor—the Klondike and the Senator Dunlap. The first is a large, round, prolific berry of good flavor, color and substance; the latter is of the old Excelsior type with all the good points of that old favorite, but with a better color and also otherwise are improved. Several are giving these berries trial and so far the reports coming in have been very commendatory of both sorts. Others are also undergoing trial and these many experiments will doubtless discover a better berry for us than any we now grow.

INJURY BY MELON APHIS.

The melon aphis first attracted notice through its injuries to cotton in 1854, and from that time on it has done more or less damage, year by year and, in view of its rapacity, rapid multiplication, and omnivorous habits, will no doubt continue injurious in spite of all that can be done to repress it.

As a melon and cucumber pest it was noticed in Florida and southern Illinois in 1880, and in the next three years caused considerable losses in those States and in Georgia. Soon afterwards it became recognized as a strawberry pest. In later years many other food plants were added to its known dietary. The years 1892, 1893, and 1898 were unusually bad "aphis years."

In 1893 information was received from a pickle company of Omaha, Neb., of severe injury in that State. This company was growing between 30,000 and 50,000 bushels of cucumbers a year, and several hundred neighboring farmers grew this vegetable for the company. Two-thirds of the crop grown in 1892 was destroyed by the aphis, and in 1893 half of the crop was lost These injuries made it difficult to induce outside planters to grow for the company.

In 1898 this species was extremely troublesome. In order that a good idea of its destructiveness may be had, some reports are cited. In January injury was reported on cucumbers in Florida and in May to strawberries in Delaware, where the insects were described as "taking everything clean." By June this insect had been very injurious to watermelons in southern Texas, when it destroyed many acres of early vines. In July, Texas correspondents reported the destruction of 1000 acres of cantaloupes in one locality, and the outbreak assumed such proportions as to cause much newspaper comment. One company reported that the ravages of this pest had cost them $20,000, and that agriculturists of that section had sustained irretrievable loss. In November a Pennsylvania correspondent reported losses to cucumbers grown under glass, and in December this aphis resumed its ravages to cucumbers in Florida.

TRANSPLANTING ONIONS.

Some idea may be had from the following as to the cost of transplanting onions. A one-tenth acre plat at the New Mexico Experimental Station, was trasplanted with onions grown in a cold-frame in 1902. The rows were practically 335 feet long by 15 inches apart with the onions four inches in the row, making 1005 onions to the row, or 10,050 to the plat.

The cost of transplanting this plat of onions amounted to $2.95. This included, besides the cost of transplanting, that of the first irrigation, bringing the onions from the seed-bed to the field, and dropping them ahead of the men transplanting, about the proper distance in the row.

At this rate, it would cost $29.50 to transplant an acre or 100,500 onions—practically one-fourth cheaper than to thin the same area. In 1903, a one fifth acre plat was transplanted on the 14th of March. The rows were 15 inches apart, and the onions four inches apart in the row. The cost of transplanting this plat was $6.00. At this rate, the estimated cost per acre would come to $30.

In the spring of 1904, another one-fifth acre plat was transplanted, the onions being set out the same distance as in the previous years. It cost $5.70 to transplant this plat. This would make one acre cost $28.50. The average estimated cost per acre for the three years amounts to $29.33.

Be what you wish others to become.

TOADSTOOLS AND MUSHROOMS.

There is no special class of mushrooms known to science as "toadstools." Toads do not sit upon these plants, nor do they eat them or have anything whatever to do with them. Country school teachers and others specially interested in country life would do well to collect and keep on exhibition authentically named specimens of all the more important edible and poisonous mushrooms of their neighborhoods.

New Muskmelon

The new muskmelon pictured and described on the Cultivator cover of Jan. 10th is handled exclusively by

JOHNSON & MUSSER SEED CO.

113 N. Main St., Los Angeles, Cal.

50c per packet, $2 per ounce

500,000 Brandywine Arizona and Klondyke **Strawberry Plants**

At bottom prices. All first-class and from one east last spring. G. W. Mullendore, Covina, Cal.

S. S. Wallace & Co.

WHOLESALE

Produce and Seed Merchants

Consignments Solicited.

Seed Potatoes and Beans. We exercise the greatest care to have the seeds pure and reliable.

507 N. Main St., Los Angeles, Cal.

Crimson Winter Rhubarb

Original Burbank Strain

$1.50 per Doz., $6.00 per 100, $40 per 1000

Now is good time to plant. We are the only Rhubarb Specialists on the Coast. We devote most of our time to its cultivation and improvement. We have the Best pedigreed plants ever offered of this wonderful money maker. Write or call on

J. B. WAGNER, the Rhubarb Specialist, Pasadena, Cal.

A Fine Stock of Superlative Raspberry, also Fruit Trees and Vines of All Sorts. Both Phones.

P. S.—See Article in Cultivator on Page 550, issue of December 6th.

SOW WESTERN SEEDS IN WESTERN SOIL

Here's a SPECIAL OFFER to make New Friends for LILLY'S Northern Grown Seeds

LILLY'S BEST Vegetable seeds are grown on and adapted to this coast. These 10 varieties are the aristocrats of the kitchen-garden. They represent the acme of Lilly effort, the result of years of careful seed selection and cultivation. This Special Offer gives you $1.50 in these seeds for $1.00. Read the descriptions, all of which are carefully and conservatively made. Living up to the catalogue description is what has built up the reputation of Lilly's Best Seeds.

PUGET SOUND SPECIAL TOMATO.

This miniature, from a photograph, gives you an idea how the tomato produces. Is an early dwarf, stands free from the ground, with hard, firm, round stalks. Yields large clusters of round, firm, luscious fruit, beautiful rich color, free from blemish, stands shipment splendidly. A three-season leader; popular everywhere. Perfected by us on our experiment grounds at Brighton Beach, and can be obtained solely from us. Sold only in sealed packets. Ounce, 60c; packet, 10c.

GOLDEN JERSEY WAX BEAN.

Brittle, tender, broad, thick—the best of all the yellow pod bush beans. Stringless. Beautiful golden color and delicious flavor. Vigorous, reliable, and an abundant producer. ½-lb., 25c; packet, 10c.

JACK FROST SWEET CORN.

Plump, milky kernels, that melt in your mouth; tender, sweet, prolific—really phenomenal. Dwarf variety, permitting close planting. Very hardy. Jack Frost seed has been perfected by ourselves on Puget Sound, is thoroughly acclimated and peculiarly adapted to Pacific Coast conditions. Not only season's earliest, but longest and latest producer. We cannot say too much in endorsement of this corn. Large packet, 15c.

LILLY'S GLORY CABBAGE.

Glorious in flavor, gloriously sound, a glorious grower and a glorious shipper. Lilly ships tons of this cabbage seed across the continent, as this variety, perfected on Puget Sound, is admitted to be the best cabbage grown. Even rounder and more solid than the Danish Ball Head, and infinitely better adapted to Pacific coast conditions. True to type, every head like its neighbor, symmetrical, white inside and solid to the core. ¼-lb., $1.25; 1-oz., 35c; packet, 10c.

PRIDE OF THE PACIFIC CUCUMBER.

Almost a seedless cucumber, the seeds being small and few. Perfectly smooth, very dark green, beautiful white flesh, perfect cucumber flavor, exceptionally firm, crisp and delicious. Grows 10 to 18 inches long, always straight, and dark green until ripe. Vine hardy and vigorous; enormously productive; yields early and late in season. ½-lb., 65c; 2-oz., 40c; oz., 25c; packet, 10c.

ENGLISH FORCING LETTUCE.

Large, crisp, tender; best variety for home culture, because easily grown outdoors or in frames; rich color, ideal for garnishing. Hotels gladly pay one-third more for this lettuce. Stands more neglect in watering, and does not quickly run to seed. Most profitable for market purposes because quickly ready in fine large bunches of beautiful light green, which never spot. ½-lb., 50c; oz., 20c; packet, 10c.

MT. RAINIER PEA.

Dark, rich green, well-filled pods, creamy and delicious; enormously productive. Propagated in Washington, and the best early pea ever offered to western growers. Especially valuable for market gardeners, commanding the highest prices through the season. Large packet, 10c.

CRIMSON GLOBE BEET.

Close grain flesh, very sweet, tender, blood red, delicately zoned with white. Exceedingly smooth surface. Finest in form, flavor and color. Free from woody, fibrous roots. Grows uniform in size—about three inches through. Matures early. Pkt., 10c.

GOLDEN HALF-LONG CARROT.

Best of all the yellow varieties. Very sweet, close in texture, golden yellow, solid, very smooth, attains large size, has small core, and adapted to all soils; under good cultivation yields 25 to 30 tons per acre. Ready for table at all times during growth. Equally valuable for stock. A market favorite. ½-lb., 25c; packet, 10c.

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The larger it grows the solider it gets; twice the ordinary size. As hard as a bullet, while tender and deliciously crisp. Retains goodness long after maturity. ½-lb., 40c; packet, 10c..

SPECIAL PRICE OFFER.

$1.50 worth of above seeds for $1.00.

$1.00 worth of above seeds (one packet of each variety, with packet of Old Fashioned Flower Garden Seeds thrown in free) for 75c.

Six 10c packets, with Flower Garden packet, 50c.

Three 10c packets, 25c.

Above prices are postage paid.

Grow LILLY'S BEST SEEDS AND GROW RICH

Plant Lilly's Best Northern-Grown Seeds, grown on this coast for this coast, and be sure of profit. You will find that the saying, "Best for the West" is true in every case, and that Lilly's Best Seeds will give you best results. The above are only ten varieties of Lilly's Best vegetable seeds. For information as to the full line, write for

LILLY'S 1907 SEED CATALOG,

Which will be sent free, postpaid, on request. Lilly's 1907 catalog surpasses all previous books in attractiveness and completeness of plant information. It is thoroughly dependable, and besides containing descriptions, price lists and culture directions of thousands of varieties of seeds, bulbs, roots and cuttings, it is a handbook of information on poultry foods, poultry supplies, stock foods, fertilizers, garden supplies, sprays, horticultural supplies, etc. If you want one, free, mark an X in the white square.

HOW TO ORDER.

Mark an X in each white square opposite the variety of seed you wish to order, mark the quantity in square or on margin, figure up the total, clip out the ad., and remit in same envelope with the clipped ad. Be sure and write your name and address plainly, filling in the following blank:

Clip ad. and mail to

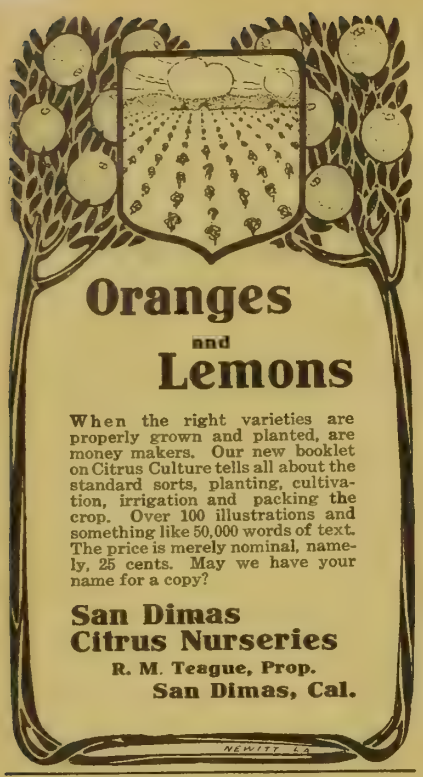
CHAS. H. LILLY CO.

Seattle, Wash.

Enclosed is $....., for which please send me $..... worth of Lilly's Best Vegetable Seeds, as marked above.

Name.....

Address ..... Jan C 31



Oranges and Lemons

When the right varieties are properly grown and planted, are money makers. Our new booklet on Citrus Culture tells all about the standard sorts, planting, cultivation, irrigation and packing the crop. Over 100 illustrations and something like 50,000 words of text. The price is merely nominal, namely, 25 cents. May we have your name for a copy?

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SEE MINE, OR WRITE ME ABOUT YOUR CITRUS NEEDS. IT WILL PAY YOU.

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The Highest Quality Money Can Buy

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Whale Oil Soap

Barrels, Half Barrels, and in Kegs.

C. C. C. Anti-Carbolic Tree Spray

This spray is ready for use by simply adding cold water. It assimilates perfectly and forms no sediment. Makes the trees clean and healthy. More **effective**, and **cheaper** than lime, sulphur and salt, or caustic soda.

Whale Oil, Fish Oil, Crude Carbolic Acid, Red Arsenic

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California Compounding Co., Inc.
Long Distance Telephone Works, 207-209-211 West Taylor St., San Jose, Cal.

20,000 **Citrus Trees** 20,000

Washington and Thomson's Improved **Navels** and **Valencias** Seedless Grape Fruit

One and Two-year Buds, Clean, Healthy, Vigorous Stock.
Better Secure Your Stock At Once, as the Supply Is Short.

Pollard Brothers **Alhambra, California**

With the Citrus Growers

RIVERSIDE CITRUS GROWERS' INSTITUTE.

(Continued from page 99)

First. By interchanging experiences.

Second. By extending beneficial results of government investigations, state and national, and by rendering more efficient, organized aid in such work.

Third. By united effort in securing needed legislation.

Fourth. By organized effort in securing better transportation facilities.

The plan suggested briefly is as follows:

A central organization with affiliating associations in the various citrus sections, the present local clubs serving. The central association, with an executive committee and corresponding secretary to keep in touch with auxiliary societies.

The central association to meet annually.

A call was issued for a meeting of those interested in this line. A meeting was held at 4 o'clock, adjourned to meet at 1 o'clock on Thursday.

In the afternoon Frank L. Palmer of North Pomona had a very good paper on "Investigation Needed to Be Taken up by the Experiment Station." The paper embraced about everything in the line of citrus fruit growing, and was followed by one along quite similar lines by Prof. C. B. Sumner of Claremont.

Prof. Ralph E. Smith, director of the citrus experiment station, had a paper and spoke on "Proposed Experiment Station Work," and very fully outlined what he considered the proper work to be taken, which he classed under five heads, as follows: One.—Nature of soil and location. Two.—Kind of tree. Three.—Propagation. Four.—Orchard practice. Five.—Fruit handling.—Insect problems would be carried on for a time, but he thought that it would ultimately require a trained entomologist. The work of the station is already well started and several men engaged in it.

Prof. E. J. Wickson, Dean of the Agricultural College of the State University, was the next speaker on the same subject, but he claimed that Prof. Smith had covered all ground he had expected to occupy, but in answer to questions as to the maintenance of the experimental station, he said the $30,000 appropriated by the legislature two years ago had been sufficient for all purposes, buildings, etc., until the close of the fiscal year. This also embraced the laboratory at Whittier.

Prof. Wickson was also the first speaker of the evening, his subject being "Possibilities for Improvement of Citrus Fruits," and gave some very interesting reminiscences of the first citrus fair held in Riverside, when there were a score or more of somebody or others' best in oranges and lemons. That large list of the "best" had dwindled down to about five with two commercially supreme, namely the Washington navel and the Valencia. Of lemons there were three, with the Eureka in the lead. The demand was not now for new varieties, but for a greater adaptability of what we have, showing that it is not new varieties that are desired. They want a late navel, and a Valencia that will not turn green and that will have some navel qualities.

California has outstripped the world in orange production. Italy with its $6,000,000 worth of oranges a few years ago thought it had reached the limit, and Great Britain with a consumption of $10,000,000 of oranges and lemons was fully stocked, but here we have California producing $20,000,000 annually. This had been a triumph of selection. Experiments are being carried on by means of hybridation to give the orange a hardier stock so that it can be grown further north, but nothing in the line of injury to California was expected.

President Benj. Ide Wheeler of the State University gave a very scholarly address on education and on the relation of the State University to the experiment station, which was pronounced by many who heard him to be his ablest effort on an agricultural subject. He addressed his audience as fellow students. He said that the teaching of today in our university would have been ridiculed by the older universities a generation or two ago. Today the university fits people for trade and commerce, in fact educates them to fill all the various stations in life. Riverside was peculiar in that the people lived in the midst of their work—the city in the country and the country in the city. There never was anything just like it before. An education to be of value has to be part of the life. It is a something that promotes health. It is not anything that makes sickly. Health is the most contagious thing in the world. Education ministers to the highest religion by being a promoter of health.

Thursday, Jan. 24th.

No meeting was held Thursday forenoon, because of the great number who wished to take a drive throughout the city, its environs and to make a visit to the Citrus Experiment Station. In the afternoon, Mr. W. C. Barth of Corona, read a well-considered paper on some of the definite methods of fertilizing fruiting orchards successfully, now well determined in practice, and in this connection, Mr. Barth is a strenous advocate of the use of barnyard manure—"all you can get."

James Mills, Superintendent of the Arlington Heights Fruit Co., followed with a splendid talk, the embodiment of years of observation and practical experience. He asked the audience to look at the groves that were giving the best results in dollars and cents, and they would all find it was no haphazard hit or miss business, but the result of cool calculation. The fact that Mr. Mills has clearly demonstrated this truth in the successful upbuilding of his mammoth groves, caused his speech to be listened to with unusually close attention and he was enthusiastically applauded.

"What definite practical progress has been made in controlling orchard insect pests." This was the theme discussed by J. W. Jeffrey, horticultural commissioner of Los Angeles county. It is the largest subject before the institute, said Mr. Jeffrey, as it needs the cooperation of the officials and every orchardist in the state, and it was ably handled, in a way too, that plainly showed Mr. Jeffrey had made a deep and exhaustive study of the subject covering a considerable number of years.

R. P. Cundiff, chairman of the Riverside County Horticultural Commission, led the discussion of Mr. Jeffrey's paper. He called attention to the fact that old trees are more effected with red scale than are young ones. Quarantine has done more for Riverside than any other artificial means. No scale pest once introduced has ever been entirely eradicted. The speaker urged the necessity for a national quarantine law. S. A. Pease, Horticultural Commissioner from San Bernardino was called for and said that he had more faith in fumigation, one fumigation lasting for three years. Damage was general where spraying was used. Did not believe in daylight fumigation.

The committee appointed to report regarding the formation of a California Citrus Fruit Growers' Association advised the appointment of another committee of five, to complete the organization, and Mr. C. C. Teague, who was chairman of this meeting, appointed Messrs. Reed, Mills (Jas.), Koethen, Sumner and Bishop to arrange the preliminaries.

After the resolutions were read by Mr. C. E. Rumsey, and adopted, the most brilliant Farmers Institute ever held in California was brought to a close with a masterly address on "Reforestation and Water Supply," by Ex-Gov. Geo. C. Pardee.

Resolutions.

The following resolutions were unaminously adopted by the special Citrus Fruit Growers' Institute at Riverside:

Whereas, the importance of good roads to the California farmer is manifest in many ways heretofore not appreciated, and

Whereas, the necessity of a good road law is vital to the development

20 Reasons
WHY THE
Addison Pump

Is Better Than All Others

1. It will pump more water with less power.
2. It is more substantially constructed.
3. Has no overhanging bearings to spring and cause friction.
4. Absolutely uniform—does not break rods.
5. Plunger leather can be changed with less trouble and expense.
6. Water discharge in continuous stream—no pulsations.
7. Noiseless in operation.
8. Has no jar or hammer.
9. Perfectly balanced, no braces are required to keep pump in position.
10. Will be in good working order when other pumps with erratic or variable motion are in the scrap pile.
11. The frame contains within itself the main bearings, which are unusually large.
12. The cranks consist of three gearwheels, pinned on opposite sides, thus forming a double crank.
13. The outside gears are shrouded on the inside and the center gear on both sides. The pinions are placed on two counter-shafts in main frame in such a manner that the shrouds of the gears rest on the shrouds of the pinions, forming a bearing to carry the load when pumping, and thus keeping the teeth in proper mesh, giving the greatest strength and least wear and distributing the weight over six boxes.
14. The pitman rods are of the same length and are forged from one solid piece of best machine steel.
15. The driving and countershafts have only 22 inches between the bearings which carry the load, and with the size of shaft used makes it impossible to swing out of line, under the heaviest of work.
16. The cross-heads are planed and fitted with tempered brass strips made to fit groves in columns; so arranged that wear can be taken up.
17. Both pump rods are fastened to the cross-head pins, so there is no pulling strain on the cross-head proper.
18. By our specially constructed couplings, rods are as strong at joints as at any other part.
19. The Addison Patent Straight-Waterway Valves offer a free passage for water, causing less friction than in any other valve.
20. Pump can be operated without a stop as the following testimonial proves:

Addison Pump Co.,
Pomona, Cal.
Gentlemen:—

In reply to your inquiry of Dec. 24th., I am glad to say that your pump has now worked steadily for over two years with entire satisfaction.

As far as I can recall it has never had to be repaired, and has never missed a stroke.

Very truly,
J. H. McBRIDE.

Pasadena, Cal., Dec. 28, 1906.

If you will come to Pomona and spend a day with us we will show you our pump and other pumps in operation, then leave it to your own judgment to select the best.

We give an iron clad guarantee with every plant.

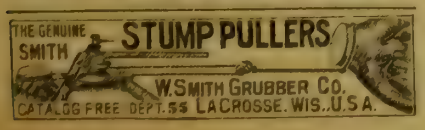
IT WILL PAY YOU TO INVESTIGATE THE ADDISON BEFORE PURCHASING A PUMP.

Send for Catalogue B.

Addison Pump Co.
Cor. 1st and Cypress Sts., Pomona, Cal.
Phones: Home 91
Sunset, Black 1551

Electric Frost Alarm Thermometer

Automatically rings a bell to announce the approach of frost. Frost Prevention Co., Fresno, Cal.



of the state in order that it may compete with other states where climatic conditions are attracting homeseekers by reason of improved systems of road making:

Be it resolved: that the State Legislature now sitting be urged to enact a law which shall justly and equitably tax all property of the State to create and maintain serviceable highways.

Whereas, we deem Farmers' Institutes to be of the utmost importance in their educational benefit to all farmers, stock growers, poultry raisers and orchardists, we, the citizens of many southern counties, assembled in the Citrus Institute, do hereby

Resolve, that our representatives in the Legislature be urged to appropriate sufficient money to carry on Farmers' Institute so as to reach larger numbers of our agricultural people.

Resolved, that copies be furnished to the local papers, to the Secretary of the Board of Regents of the University of California, and to our representatives in the Legislature.

Resolved, that, Horticultural Commissioners should be appointed without regard to politics and to secure this they should hold a certificate from the State Board of Horticulture after the examination as to qualifications and their term of office be four years.

Resolved, that the interest shown by this gathering of citrus growers indicates an appreciation of the need for scientific research in this branch of horticulture, and a belief that the appropriation made by the Legislature for the Pathological Laboratory at Whittier and the Citrus Experiment Station at Riverside under the control of the State University is a fit recognition of a great industry, and we urge upon the Legislature an appropriation for the next two years that will provide for the Pathological Laboratory and Experiment Station in a manner to increase its usefulness—not less than $40,000.

Resolved, that the needs of the citrus industry were fully recognized by Governor Pardee and the sincere gratitude of all citrus growers is due him for the aid given in securing the first appropriation for this purpose, and for his hearty endorsement of the effort to bring science to the aid of every citrus grower in the State.

Resolved, that we deeply appreciate at this institute the presence of former Governor Pardee, of the President of the State University and of the Director of the College of Agriculture and his assistants, which indicates their sincere interest in our problems.

Resolved, that our sincere thanks is hereby given to those who have prepared papers and addresses on most important subjects.

Resolved, that a committee of three be appointed to confer with the Citrus League to ascertain whether that organization can be expanded to take in other great interests in this industry not now covered by their work.

Resolved, that this institute recognizes with sincere gratitude the long continued efforts of J. H. Reed of Riverside which have culminated in the successful inauguration of scientific work brought to the very doors of practical growers.

Resolved, that the thanks of this convention be extended to the Chamber of Commerce for the use of this hall, and especially to our friends who so kindly entertained us this morning in the ride over the most beautiful country on earth.

FERTILIZING IN FLORIDA.

The experience of most growers points to the use of chemical fertilizers alone for all citrus trees. The grove fruits more heavily, a better quality of fruit is obtained and the trees are certainly in a healthier condition. Where large amounts of organic fertilizers are used, dieback will almost surely affect the trees, and ammoniated fruit or fruit containing a large amount of rag and of poor shipping and keeping quality is the result. A pomelo, as already stated, is in quality a reflection of the food and cultivation given the tree on which it was borne.

Fertilizers should be applied at least twice a year, just before or at the time of the commencement of growth and again in summer, about the month of July. During the winter the roots of citrus trees in some parts of the State continue growth, and it would appear advisable in those parts to make a third application in the fall. If nitrate of soda be used as a source of nitrogen it is best to apply it in three separate dressings, in March, May and July, and the phosphatic and potash fertilizers twice, as recommended above. Nitrate of soda moves readily through the soil and may be lost to the tree unless appropriated in a comparatively short time after being placed in the soil.

The leaching of fertilizers is in a large measure prevented by the presence of humus, and pains should be taken to maintain a very considerable quantity of this material in the soil. It may be done either by mulching or by the growing of cover crops. Hume

---

The California orange season has opened in dead earnest and from now until May there may be a continual stream of yellow radiating across the continent. Yellow cars containing the golden yellow fruit and the yellow gold to pay for it all will come back to enrich the grower and shipper. It takes anywhere from seven to twenty days for the fruit to reach its destination, according to the distance to which it is billed.

If cars are available to support all demand, it is possible that shipments will run up to 250 cars daily, and this means that there may be upward of 3000 cars rolling eastward at the same time. If shippers are wise they will go slow about sending too great an amount of fruit out at this stage. Having been held up by the rains for so long a time, in addition to the unusual lateness of the fruit, it will be natural for all to want to get to the market first, and if everybody does ship it will surely cause a glut with the inevitable slump in prices.

The fruit is ready to ship, the color is superb, the cells are chock full of juice, and the sizes—well, the sizes are causing shippers sleepless nights; they are too large as it is, and the longer they stay on the tree the larger they will grow. Large sizes will be at a discount this year and a deduction will have to be made for this class of fruit from the quoted f. o. b. prices, which are for standard sizes. On the other hand, 200s to 288s will be at a premium, but the lesser sizes are few and far between. It does seem strange that while all of the fruit grown in Northern California this year was exceptionally small that the southern orange should be so exceptionally large.

Coming back to the necessity of shippers' using discretion in making their shipments in order to overcrowd the markets, there appears to be one contingency that will save them in spite of themselves and that is that it will probably be next to impossible to get cars enough to supply the demand for them. It is true that the railroads have had a respite, caused by the rains, and it is probable that they will have cars enough for all the fruit that ought to be shipped (about 100 cars a day for this month), but that the demand will be far in excess of this amount is a certainty.

While no doubt the roads are trying hard enough to get all of the refrigerators possible to California, they are facing unusual conditions. The roads all over the country are congested with traffic and they are grabbing everything available on wheels and while all agents have instructions to hurry the refrigators along, in most cases they are sending them loaded with anything from furniture to cattle. Motive power is also scarce and a prosperous country is actually suffering from too much prosperity.

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The present day catalog, if up-to-date, may easily take the place of a cyclopedia, with the ordinary individual. We have before us a notable example in the 1907 catalog of hte Fancher Creek Nurseries. Aside from the beautifully colored plates of fruits on the cover, the book fairly teems with cuts of exceptional educational value.

As a prelude to every variety of fruit, is a carefully compiled and condensed set of rules governing the planting and culture which is of value to both the experienced planter and the "tenderfoot." In the ornamental department every plant is given its botanical name, its common name, its nativity, height, size and other distinguishing characters, so that no one possessing one has need of a horticultural cyclopedia. It is easily the finest catalog published on this coast.

IT'S PENNY WISE.

Policy to set out a good tree, costing good money and then let the sun burn the bark or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Manufacturing Company, 2124 Willow St., Los Angeles.

Piles Cured In 6 To 14 Days.
PAZO OINTMENT is guaranteed to cure any case of Itching, Blind, Bleeding or Protruding Piles in 6 to 14 days or money refunded. 50 cents.

TREES
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The demand for all sorts of fruit trees promises to be heavier than ever before. Place your order now, before our assortment is exhausted.

Deciduous Fruit Trees

We have this season a superior stock of

PEACHES PLUMS
PRUNES PEARS
APPLES APRICOTS
CHERRIES OLIVES
NECTARINES

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RIVERSIDE CITRUS INSTITUTE.

It is doubtful if a more successful convention of citrus growers was ever held in California, or one representing more talent in membership, or productive of more far reaching valuable results, than the one held at Riverside last week. It was emphatically a big convention of big brained men, who have advanced ideas, matured by experience of years in the cultivation of the citrus industry.

From the mass of ideas suggested and elucidated by the various speakers and essayists, some eminently practical observations were obtained. It would require a full number of the Cultivator, or even two numbers, to publish a consensus even of the opinions advanced by the various technical operators who gave their experience in orange culture. Naturally a business that reaches a volumne of $20,000,000 annually is big enough to draw to it the brainiest men in the state, and that is just what the citrus business has done in California. To listen to these Napoleons of success and study them as they outline their methods is interesting in the extreme. They differ from the agriculturists of the East in that they operate on purely scientific lines. They are students of soil in every feature it embraces. They look to scientific investigation and experience for continual increase in the quality of the fruit they produce, and are not content to abide by the results achieved in any series of former accomplishments. Here is the secret of success in the California citrus growers' operations. They come from investigation, from close observation of causes and effect and practical application of methods calculated to bring about highest results in cultivation fertilization, fumigation, irrigation, pruning and care of the fruit.

We are speaking now of the eminently successful grower who has mastered, so far as his light goes, the difficult proposition of orange culture.

Of course there are hundreds who do not study conditions. They are content to go along with mediocre prosperity. They have made money on their groves in the past and are apparently satisfied to let well enough alone. But the time is coming, very soon, when the indolent grower will be left in the race and perforce will have to be satisfied to receive less compensation from his orchard than his up-to-date competitor.

The public is being educated, in fact has been educated already, to demand only the very best in color, form and quality, which can be produced in orange and lemon culture. Hence, it behooves the grower, no matter how small his orchard may be, to devote time to investigation, to expend money to develop the highest character possible in his fruit. Land values are too high, now, to permit of carrying orchards which return only second-class products, which bring only second rate prices.

These points naturally followed all through the line of discussion indulged in by the speakers who were big enough to find a place either on the program or on the floor of the Riverside convention.

That the occupation of the citrus grower is one of the most delightful in the whole catagory of agricultural professions was evinced by the enthusiasm with which the members of the convention entered into the discussion.

It was almost impossible to single out any of a dozen or more of speakers, and say who of the number was the abler or more entertaining. One veteran grower, however, we believe he was Mr. Chapman, voiced the sentiment of the entire institute when he paid the orange and the orange industry of California this high tribute to its beauty and worth. He said:

"I wish that I had the language that would enable me to adequately set forth my high estimate of the orange and fascinating work of its culture, of the commercial importance, of the business, of its incomparable beauty and its wholesomeness as an article of diet. It is king of all fruits, standing without a peer, and not only contributes largely to the wealth of the state but also to the general health of the nation. It's delicious juices are as invigorating as they are palatable, toning up the organic function as well as the enervated nerve centers, thus giving to a man a tireless physique and a clear brain. Let us go forward in our calling, feeding the greatest nation in the world on a fruit that the poets would say 'was fit for the Gods.'"

The presence of Dr. Wheeler and Prof. Wickson of the State University and the admirable addresses they gave, were especially commended for the frankness with which they stated the plans outlined for experiment work as well as the subject matter of their addresses.

The Riverside Institute will go down in history of California University work, as one of the most fruitful of results of any institute ever held in the state.

MR. POWELL'S RETURN.

Citrus growers in Southern California will note with more than usual interest the return of Prof. Powell to that field. He expected to be back to Riverside about the middle of February, but the urgent demand for his services has hastened his return. At the Riverside Citrus Institute the statement was made that the investigation of Prof. Powell in the citrus orchards had saved the growers $68,000 the last season. Now his return is looked forward to with expectation that his researchers will still further increase the profits of the orchards.

His labors, however, have mostly been confined to methods of care in handling fruit and in its shipment, and it is in educating the shippers in this particular that he has proven so valuable to orange growers. It is to be hoped the department of agriculture at Washington, may permit Mr. Powell to remain a year in Southern California to continue his profitable work. After finishing his investigation in Southern California he ought to educate the citrus growers in the Porterville-Lindsay district along the same line.

Complete Irrigation Plants

A Stream of Water Four Feet Across and Nine Inches Deep, Pumped by a 60-H.P. Western Engine. The fuel is No. 2 Distillate, 5½ gallons per hour, costing 29 cents, making this plant without question the most economical in Southern California

Send us answers to the following questions, and we will furnish you preliminary estimate of the **cost of installation** and **cost of operation** of your plant.

1. Do you pump from bored well, river or ditch?
2. If from river or ditch give diagram showing elevation and character of soil.
3. If from bored wells state number and size of each and distance from centre to centre.
4. Have you a pit? Give size and depth.
5. How far from surface to water level?
6. Gallons per minute desired.
7. Has well been pumped? How much does the water lower?
8. Height above ground water is to be elevated.
9. Length of discharge pipe. State kind and size to be used.
10. What experience have you had with power?
11. Have you decided on pump; if so what make?
12. What part of the plant do you want us to contract for?
13. When do you want plant installed?
14. Do you want us to install plant? If not, who?

We Guarantee the Cost of Operation

Western Gas Engine Co.

908 North Main Street
Los Angeles, California

News of Country Life in the Golden West

Northern California

AGRICULTURE.

Watsonville has been visited by about 22 inches of rain this season.

Arkelian Bros. of Fresno, will grow 160 acres of cantaloupes near Exeter.

In many districts the rains have seriously interfered with plowing and seeding.

The Grange at Sunnyvale is planning a Farmer's Institute to be held on February 22.

Tulare cheese will soon be on the market, not only made in Tulare but labeled "Tulare."

Farmer's Institute will be held at Panama Feb. 12—13, and at Bakersfield on the 14th.

Los Gatos has had a rainfall of 13 inches so far this year, as compared with 4.17 of the same time last year.

Two lots of hops were sold in Ukiah last week; Pickle and Adams of Potter Valley had 170 bales and Bartlett Bros. 128 bales, the price being 12½ cents.

Hollister Creamery is turning out about 200 pounds of first-class butter daily. This week it reached the highest notch in the market selling like hot cakes for 37½c per pound.

The Tahoe Stock Association, which was organized in Folsom by the stock raisers of Sacramento, Placer and El Dorado counties, will hold its second meeting next Monday in Folsom.

E. E. Chubb of Escondido, has finished marketing his sweet potato crop and reports that off of one and one-half acres of land he grew ten tons of sweet potatoes, which netted him $400.

Someone has said that buying a dairy cow is like courting a girl, you must know something about the mother. We cannot expect good results from a heifer when her ancestry was a failure.

Pajaro Valley farmers who have beets on adobe land will be unable to haul them for some time to come. The ground is so wet and muddy that to get into it at present with teams would be out of the question.

Tiling for drainage has proved a great success about lowlands of Chino. Six to eight inch tile is used, in one-foot lenghts, and it costs about $10 an acre. Seventy-five per cent. is esteemed a conservative estimate of the value to the land.

H. E. Williamson of Moneta, has 3 heifers which gave in December 2868 pounds of milk, which tested 4.35 for butter fat, giving a cash return of $51.94, added to which is all the milk used in the family which in this case was considerable.

So far this season virtually no planting has been done by the farmers of Shasta county. The continual rain and snow storms have so saturated the ground with water that nothing but mud could be turned over by the moldboard of a plow.

The meetings under the auspices of the Sacramento Chamber of Commerce and direction of Prof. C. W. Woodworth, in which short courses in agriculture were to have been given, have been canceled on account of the lack of attendance and proper interest.

HORTICULTURE.

Orchardists all over the north complain of too much rain.

Eucalyptus will be planted in all parts of Central California. this spring.

No more rain is needed to insure abundant fruit crops, if soil moisture alone is all that is needed.

Fruit trees in all parts of the State, and this applies especially to citrus fruits, have felt no ill effects from either snow or cold weather.

In the great valleys of Central California the heavy rains have drowned out all orchard pests and gophered trees will be a rarity for a time.

H. V. Calkins of Linusay is preparing the forty acres he recently purchased at Santos, to plant this season, 20 to oranges and 20 to Emperor grapes.

The Lamoine Lumber and Trading Company has paid $300,000 for 10,000 acres of lumber land in Shasta and Siskiyou counties and the deed was filed for record in Siskiyou county.

Oranges shipped from Folsom to Eastern markets have been bringing some top-notch prices during the past couple of weeks, and the results of the sales have been very encouraging to the growers.

A large amount of orchard pruning is being done in Pajaro Valley at the present time. That work has been greatly delayed by the heavy rainstorm and fruit growers are putting on extra large forces and rushing the work.

A large percentage of the orchardists of Pajaro Valley are ready and anxious to commence spraying their fruit trees with the lime-sulphur solution just as soon as the ground dries out sufficiently to permit the hauling of a spraying outfit through the orchards.

Secretary A. E. Miot of the Tulare county Board of Trade is having prepared a special orange bulletin descriptive of the citrus belt. The first page will contain a large half-tone of the Williams orange ranch near Porterville.

A carload of Orangevale navels sold in Chicago, brought the handsome average price of $3.25 per box. Three cars in Boston brought averages of $3.10, $2.87½ and $2.85, while in Chicago an average of $2.50 was received, and in New York an average of $2.42½.

Articles of incorporation have been filed at Fresno, by the Eucalyptus Forestry Company, formed for the purpose of growing eucalyptus trees and all other kinds of trees and shrubs and for extracting such by-products as eucalyptus oil from the trees.

Southern California

AGRICULTURE.

San Jacinto is building another creamery.

Pomona has had 17.80 inches of rain to date.

The rainfall at Santa Maria to date has been 12.53 inches.

The rainfall for the season at Lancaster has reahced 12.17.

The rainfall at Ventura up to the present date has been 18.26 inches.

Rainfall to date at Chino, 17.18 inches, last season to the same time, 5.17.

The La Habra Farmer's Club held an enthusiastic meeting last week at the Launer ranch.

The rainfall for the last storm at Corona, amounted to .95 of an inch! for the season, 11.95.

The Arrowhead tannery recently injured by fire at San Bernardino, will be immediately rebuilt.

Thousands of trees for shade, windbreak, and ornamental purposes are now being planted in the Imperial Valley.

Grain ranchers in the south are doing some vigorous kicking, because the continuous rains have prevented seeding.

The Chino Land company shipped 400 fat steers—about twenty cars—to the Cudahy Packing Company, Los Angeles, this week.

The Orange County Farmer's Club met last Saturday at C. F. Bennett's out on Tustin ave and a very lively and interesting time was had.

The latest news from the headworks on the desert seem to show that the flow of the Colorado River into the Salton sink will soon be again under control.

The prospect now is that the Chino farmers will plant 10,000 acres to sugar beets this year, which is, we believe, the largest acreage yet put in at Chino.

The consensus of opinion among all the old residents in Ventura county is that there never was so much rain at any one time as there has been during the past season.

Extensive planting of cantaloupes will begin within two weeks in various parts of the Imperial Valley, and the acreage this season will be much greater than last season.

Horticultural Commissioner Nebelung for the Anaheim district reports that 59,770 trees have been fumigated and 20,000 sprayed in that section of the country during the past year.

For several days a well close to the junction of the S. P. with the Santa Fé loop line at San Bernardino has been flowing, it having been dry for nearly fifteen years. It is sending forth a good-sized stream of water.

A few months ago Mr. W. A. Van Horn secured the services of a first-class Swiss cheese maker and started an industry at his ranch, five miles south of El Centro, that at the present time promises to increase very rapidly.

At least one artesian well west of Claremont has resumed flowing after an interval of about thirteen years. Water is rising in the wells lower down in the valley, and the increase will continue now for a long time to come.

On the ranch of J. E. Jenison, just east of Downey, on January 17, was born a freak calf, perfect and well formed in al particulars and having two well-formed and distinct heads. They were joined just back of the ears and each one worked independent of the other.

HORTICULTURE.

J. H. and F. M. Reed of Riverside are erecting a lemon packing-house.

F. A. Fetley of Riverside is planting 180 of oranges in Tulare county.

A company has been formed to put in a hundred acres of Malaga grapes near Thermal.

A sorting table put into the Jameson packing-house at Corona will double the capacity.

Newport Beach expects to have a fruit cannery erected there in time to handle next summer's crop.

The shipments from Corona since last issue are as follows: Oranges, 16 cars; lemons, 8 cars, making 43.

Arkelian Bros., grape growers and shippers, have bought 320 acres of land near Mesquite Lake on the desert.

G. Harold Powell will reach California on the last day of the present month to resume his citrus fruit shipping investigations.

A company has been formed at San Bernardino for the purpose of planting thousands of acres of vines and engaging in the production of wine.

The Sunset packing-house at Corona has doubled its capacity of handling fruit by the installation of new brushers, elevators, automatic weighers and sorting machines.

January is a critical month with the orange market. Generally there is something of a slump if there be cold weather in the big cities. This year, while the trade is a little dull, fair prices have maintained up to this writing.

The Santa Fé Railroad Company has consented to the improvement of the station grounds at Arlington. Between a hundred and two hundred trees will be planted there by Mr. J. H. Reed and the company will pay the bills.

A prominent orange shipper says that the shipment of fruit up to date is nearly 2000 carloads short of what it was at this time last season. This is owing to the unfavorable conditions which prevailed the past month; and not on account of lack of fruit.

C. W. Leffingwell, Jr., of Whittier is setting out 10,000 walnut and citrus trees on his large ranch; 500 acres will be set out in full this spring on the recently acquired acreage and considerable improvement in buildings, water works, etc., will also be made.

The Mutual Orange Distributors of Redlands held a meeting at which representatives were present from each of the houses in the association and from the reports made by all it was shown that the plan on which the distributors are working is proving very satisfactory, in fact, better than had been anticipated.

LINERS

Liner Advertising
Advertisements in Liner Column 1½ cents per word. Eight words to a line. No advertisement taken for less than 25 cents.

REAL ESTATE.

CASH FOR YOUR RANCH—SEND FULL description. Will sell if price is right. W. A. COLWELL. 223 West 2d., Room 101. Los Angeles.

TREES.

FOR SALE—GRAFTED WALNUTS, PLACentia perfection on wild roots, 2 to 12 feet high, one year old and some two years old. For further particulars address ADOLPH RIMPAU, Anaheim, Cal.

WASHINGTONIA FILIFERA AND ROBUSTA and Euretia edulis palms, from 5 to 10 feet high, to exchange for other kinds of nursery stock or sold for cash. Give offers. Enough for carload lots. Erickson & Heinz, Brawley, Cal.

BERRIES.

DEWBERRY PLANTS—"SELECTED GARden," will produce big crop in 15 months, most profitable berry in California. Plants $10 per thousand. Special prices in large quantities. 1000 Pepper Trees, 4 to 6 feet. 1000 2-year-old Date Palms, 50,000 Lippia Repens to plant lawns, hillsides and terraces. GEO. B. SOUTHARD, Redlands, Cal.

CHOICE PHENOMENAL BERRY PLANTS—grown from tips only, the most prolific berry known. 75c per dozen net, $1.00 per dozen by mail. $5.00 per hundred. C. NELSON, Moneta, Cal.

HIMALAYA BERRY PLANTS—2 FOR 25c. $1.00 per doz. $6.00 per hundred. Express prepaid. BASSETT'S FLORAL GARDEN, Loomis, Cal.

FOR SALE—FIVE THOUSAND MAMMOTH Dewberry Plants will produce 600 crates to the acre. Write for prices to Oak View Berry Farm, Gridley, Cal.

FOR SALE—BURBANK'S PHENOMENAL Berry Plants, true to name, in quantities to suit. For terms apply to E. Thompson, Box 630, Fresno, Cal.

HIMALAYA BLACKBERRY, $1 PER DOZ., $6 per 100: Mammoth Blackberry, Loganberry and Lucretia Dewberry, 50c per dozen, $3 per 100.
Adelbert Cooley, R. D. 2, Laton, Cal.

COFFEE.

SPARR'S JAPARA COFFEE—YOU AND YOUR friends are offered an opportunity to buy the finest drinking coffee grown, price 25 cents per lb., packed in 5-lb. cans, one dozen in case, 60 lbs., freight prepaid. This is about two-thirds of the usual price charged for ordinary coffee. Send $2.80 for 10-lb. can. Liberal sample sent by mail on receipt of 4 cents postage. F. W. Sparr, 114 East Market St., Los Angeles, Cal.

LOVERS OF GOOD COFFEE—YOUR ATTENtion is respectfully called to the above advertisement. If you enjoy a cup of really good coffee you can buy it from me almost as close as you can buy sugar. Make up an order with your neighbor and write to me. I am a direct importer of Tea and Coffee and can save you money. I ship to all parts of the Pacific Coast and guarantee every pound fresh and pure. Established in Los Angeles ten years. F. W. Sparr, 114 E. Market St., Los Angeles.

POULTRY.

ORPINGTONS AND REDS; PEKIN DUCKS—13 prizes on 16 entries also silver cup at "Breeder's Show" 1907. Eggs now ready, can't help but hatch winners, we breed them that way, fifteen years' experience counts. Our stock are great layers, rapid growers, top market quality, we guarantee satisfaction. GOODACRE BROS., Box 45, Compton, Cal.

BLUE ANDALUSIANS—I did not exhibit this year but have better stock than ever. A few nice trios for $5.00, also good breeding cockerels for $2 and $3 each. Must have the room they occupy. Eggs for hatching $2 and $2.50 per 14. No fear of inbreeding as we have three strains.

BLUE ANDALUSIANS— THOROUGHBRED stock, good laying strain. Eggs $1.00 per 14, $5.00 per hundred. OAKDALE RANCH, Fallbrook, Cal.

PARTRIDGE WYANDOTTES—C. ANDREWS, 332 West 3rd street. Yards, Hollywood. 11 prizes and silver cup at show 1907.

COLUMBIAN WYANDOTTES, THE FANCY and Utility Fowl. Eggs and stock for sale. Eggs from Pen No. 1, headed by First Prize Cock at late Los Angeles show, $5 for 13; No. 2, $3. Also Black Tailed Japanese Bantams, $4 per 13. Frank J. Ironmonger, Hollywood, Cal.

FOR SALE—WHITE WYANDOTTES, SILVER Cup Winners at late show. Choice Stock for sale. Eggs, $2 per setting, $10 per 100. Mrs. Mary Van Brunt, Avery and Benefit Sts., Hollywood, Cal.

FOR SALE—FINE, LARGE, VIGOROUS White Plymouth Rock cockerels, $3, $4, $5 and $10 each. FRANK H. THOMAS, 1820 Hobart Blvd. Los Angeles.

SINGLE-COMB WHITE LEGHORNS, FINE white, large, birds; good layers. Hatching and shipping chicks, Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER, Ontario, Cal.

FOR SALE—PURE BRED STOCK, S. C. White Leghorn Eggs. Large eggs, great layers, eggs for hatching only. $1.50 per 15. $6.00 per hundred. RICHARD POWERS. Anaheim. Cal.

FOR SALE.—EGGS FOR HATCHING. From Buff Leghorns and Barred Plymouth Rock fowls, good color, fine layers. Eggs $1.00 to $1.50 per 15. Wm. C. PARKER No. 111 Pacific Ave. Santa Cruz, Cal..

HOLMBY POULTRY FARM.
Breeder of S. C. Black, Buff and White Orpington, Barred Rocks, S. C. White Leghonrs, Pekin Ducks, Mammoth Bronze Turkeys, Tumblers and Homer Pigeons, 130 Prenuims won at 4 shows. stock and eggs for sale,—write your wants. ARTHER LETTS Prop., WILL PURDY, Manager, Hollywood, California.

SPECIAL NOTICE.—TO RANCHERS AND Poultrymen. We have just issued a catalog on Poultry Supplies and Seeds that every one should have. It is free for the asking. S. H. Church, 505 South Main street, Los Angeles.

MACHINERY.

PUMP PLANT FOR SALE—3 H. P. GAS engine, double acting cylinder, and pipes complete. All in good working order, capacity 2300 gals. per hour. Economical, reliable outfit for a little money. JOSEPH THORNDIKE, Pasadena, Cal.

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

Buy the World's Famous Egg Food No. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for greatest batch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be isued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. FILCHER, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

Petaluma Incubator Co.

Main Offices and Factory, Petaluma, Cal., Box F.
Los Angeles, 505 South Main Street.
San Francisco Office and Salesroom, 33 Market St.

Beef Scraps

GUARANTEED ANALYSIS :

Protein 65%
Fat 8%

Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

Raw Bone

GUARANTEED ANALYSIS :

Protein 25%
Phosphates 45%

Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods

WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

WHITE MINORCAS

Won at Alameda Poultry Association Show, 1907: 1st Cock, 1st Hen, 1st Pullet

EGGS FOR SALE—$2.50 per Setting of 15; Two Settings, $4.50; Incubator Lots $10 per 100.

A Few Cockerels For Sale. Prices on application to

Coulson Poultry and Stock Food Company
Petaluma, California

S. C. White Leghorn Eggs

For Hatching, from Captain Mitchell's Strain.
Large Birds. Prolific Layers. Large White Eggs.
Order Books Open for 1907 Season.

The Lincoln Avenue Poultry Yards

Carl C. Curtis, Owner, Pasadena, Cal.
Successor to Captain E. Pryce Mitchell

Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

HISTORY OF AN EGG.

SEVERAL of my correspondents have recently asked me what they can feed to make good hard egg shells, for their hens are laying soft-shelled eggs, or eggs with a thin shell, or "leather shell" as some call it.

Soft-shelled eggs are usually caused by wrong feeding. It is due either to a lack of shell material or to inflamation of the shell forming chamber of the ovi-duct, which no longer secretes calcareous matter. It is also said that fright may cause the premature expulsion of an egg before the shell has been formed. Over-stimulation by the use of spice or so-called egg foods, tends to the production of thin shelled eggs. Worms may increase in the intestines to such an extent as to stimulate the egg passage to push along the egg beyond its usual distance. An over-fat hen has a tendency towards laying thin shelled eggs; in fact, this is the usual case of soft shelled eggs. Another cause is the lack of grit, as well as the lack of lime.

How an Egg is Produced.

Anyone upon opening after death, the body of a hen, will find a cluster of eggs in formation, much like a bunch of grapes. This is what is called the ovaries. These however are but rudimentary eggs—says poultry and pet stock,—frequently there are as many as 70 in a bunch, varying in size from a pins head to the size of a pigeon's egg. Each of these eggs is contained within a thin transparent sack, the ovaries, and during the laying period of the hen. These eggs are maturing, thus keeping up the supply. These rudimentary eggs have neither shell or white, consisting wholly of yolk, and as they become larger and larger, they arive at a certain stage, when by their own volition, weight or other cause, they become individually detached from the bunch, and fall into a sort of funnel, leading into a pipe or passage way, called the oviduct,—this organ in the hen is from 22 to 26 inches long. During the passage of the egg through the oviduct to the outer-world, it becomes coated with successive layers of albumen—the white—which is secreted from the blood vessels of the oviduct in the form of a thick,glary fluid, and is prevented from mixing with the yolk by the membrane or sack which surrounded it before it became detached from the cluster. It is also strengthened by a second and stronger membrane formed around the first, immediately after falling into the funnel, and having what is like two twisted cords, of a more dense albuminous, called by anatomists chalazes. These pass throught the white at the ends and are, as it were, embedded therein, thus preventing the yolk and germ from rolling about when the egg is moved, and serving to keep the germ uppermost, so that it may best receive the heat imparted during incubation.

Formation of Shell.

It is during the passage of the egg through the lower part of the oviduct that it gets covered with two skins that are found inside the shell. These although lying close around the egg, at the thick end become separate, and from what is called the air bubble or chamber. This speck or air space becomes daily larger as the egg gets older, and is frequently equal to one-fourth of the entire egg. This air-chamber, if perforated with the finest needle, will prevent the egg hatching. When the egg has advanced more than half-way down the oviduct, it is still destitute of shell, which begins to be formed by a process of secretion, and when about completed, various shades of brown and tinted coloring matter, are imparted in those breeds to which colored eggs are peculiar; sometimes in very brown eggs, white spots appear, but these can be readily rubbed off. When the shell and coloring are complete, the egg continues to advance along the oviduct till the hen goes to the nest and lays it.

Egg Production.

Eggs are produced from the surplus food, which is that over and above what is required for the sustinance of the hen, and if this is to stimulating, or given in excessive quantities, the result is that in the former case the ova are produced so rapidly that sometimes two of them drop into the oviduct together, which results in the eccentricities which frequently puzzle the poultry keeper. The ova travel along together down the passage and receive the white separately, but become enveloped in one shell, and when laid, are what is commonly known as double yolked eggs, but more properly it is a double egg, the white being duplicated as well as the yolk. Should these yolks be fertilized and the egg hatch, we get the occasional four-legged or other chicken monstrosities. A further result of stimulating food is varied from the above when the ova mature in excess of one day. In place of falling into the passage in pairs as above, the two drop separately, but on the same day. This results in soft egg shells, not from want of shell forming material, but rather because the shells cannot be formed as fast as the mature egg is ready for the covering. Crooked eggs are no uncommon thing in the poultry yard, and are attributable as follows:—

Twenty-four hours are usually sufficient for the formation of a perfect shell, but when, by stimulation, a second egg falls close on its predescessor, reaching it before laying, the second egg, which is up to this time soft, and is laying against a hard one, becomes covered with the shell, it when laid, presents a flat or crooked side, as the result of its position against the hard one.

Over Feeding.

To over-feeding is also attributable the further irregularity of one perfect egg being formed within another. This is caused by the irritation of the oviduct, which, contracting in front of the perfectly formed egg instead of behind it, forces it back until it meets another yolk, when the two join and again become coated with the white and the shell, thus producing another wonder. Sometimes when the ova are nearly exhausted by continuous laying, the albumen secreting organs may be most active, which results in small marble-sized, but perfect looking eggs, which are merely a shell covering a portion of albumen. Such eggs when laid, have the peculiarity of never having been at any stage attached to the ovary, but are a product only of the oviduct.

The egg normally remains in the shell forming a portion of the oviduct from seven to twenty hours, but it may become lodged at this point and be held there for an idefinite time. As the temperature of the bird's body is that most suitable for incubation, it is plain that a fertile egg arrested in the oviduct must soon undergo important changes. For this reason, some eggs have the odor and taste of stale eggs, although they are newly laid. To have good egg shell, give the fowls plenty of shell forming material, such as wheat, bran, crushed egg shell, cut or calcined bone, broken mortar, crushed oyster-shells, etc. Give green food and avoid causes of inflamation of the oviduct.

OUR ENVIOUS OUTSIDERS.

There is crying need in Los Angeles right now, today, for more quarters for tourists.—[Los Angeles Herald.

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Eggs from 200-Egg Hens, $1.50 per 15, $6.00 per 100
From Second Best Pens, $1.00 per 15, $5.00 per 100
Indian Runner Duck Eggs $1.00 per 13, $5.00 per 100
Blue Andalusian Eggs, $2.00 per 15, prize winning birds

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Fine large vigorous farm-raised stock. Bred for utility and fancy points. Eggs, 15 for $1.50, $6.00 per 100. Call and see our stock and you will leave your order, for that is the way that all lovers of Fine White Rocks do that come to the White Plymouth Rock Ranch, J. T. Davis, Prop., Pomona, Cal.

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Breeders and Importers of
Buff, Black, and White Orpingtons
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Two Blocks North, One Block East Altadena Post Office

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Eggs, $1.50 per setting, $6.00 per 100. Send for Illustrated Catalogue.
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BREEDER OF THE FAMOUS
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MY EXHIBIT OF
WHITE, PARTRIDGE AND BUFF WYANDOTTES
Won 26 Ribbons and Special Prizes at the Poultry Breeders' Show, 1907
L. E. Berkey
R. F. D., Box D87 Fullerton, Cal.

PAJARO VALLEY POULTRY.

The poultry industry in the Pajaro Valley is just in its infancy and before many years Watsonville will rival Petaluma as a poultry center. Our soil and climate are peculiarly adapted to poultry raising. Watsonville being adjacent to the main line of the Southern Pacific Railroad and having connections by water to San Francisco and other coast ports, makes it an ideal shipping point.

The Salsipuedes Egg Ranch is situated one and a half miles east of Watsonville, on the Salsipuedes road. Salsipuedes is a Spanish word meaning "get out if you can," and was the name given by the Mexicans in early days to a small stream running through the valley. The land is a part of the old Salsipuedes Rancho, a Spanish grant which extended along the Pajaro river. There are 120 acres in the ranch, 80 acres being in alfalfa and 40 acres in apples, a dairy of 30 cows, and, consequently, always an abundant supply of warm fresh milk for poultry.

The most important feature of the business is getting started right. This means a good laying strain of fowls, or else procuring eggs for hatching from some reliable breeder. The latter plan is best as it gives the novice an opportunity to work up with the business. Under this plan one must be prepared for hatching, brooding, etc.

Care must be exercised in the selecting of an incubator. There are a number of good machines made on this coast. I use a hot water machine, the water circulating in pipes through the egg chamber. Great care must be employed in incubating; but by following the rules laid down by the manufacturer of the machine you are using, any one with ordinary intelligence will be able to secure a fine hatch, if care has been exercised in the selection of fertile eggs.

When the hatch is over allow the chicks to remain in the incubator for twenty-four hours and then transfer them to brooding houses, which is divided into pens of 50 capacity each. Each pen could accommodate a few more chicks, but experience has taught that is does not pay to crowd too many chicks together. I use two hot water brooders, which are divided into four sections. Each division of the brooder has an opening into each pen for the chicks to go back and forth. Just outside of the brooder house the pens are all extended. When the chicks are about a week or ten days old they are allowed to run outside, if the weather permits. One must be prepared for a shower of rain and not allow the young chicks to become wet and cold, as this would result disastrously to your flock.

My chicks are fed for the first time about forty-eight hours after hatching. Their diet consists of warm fresh skimmed milk, with a liberal allowance of chick food. There are many good brands of chick food on the market which contain all the elements necessary for the development of the chicks. Chicks are transferred from the brooder to larger quarters when they are about six weeks to two months old, according to breed and condition of the weather. Here they are allowed free range to alfalfa. With a little grain added, the pullets soon come to maturity. I have found by expericnce that the best time to get rid of the cockerels is when they begin to crow, except what is needed for breeding purposes. At the present high prices of feed, there is nothing made in growing broilers for profit.

When pullets are about six months old transfer them to pens provided for that purpose. They will do better than on free range, if they are given proper care. Mine are fed each morning mash food, consisting of bran shorts and a little rolled barley, the whole being moistened with warm skimmed milk. About ten o'clock they are given a feed of green alfalfa or kale. At night they are fed corn in the ear, which gives them excercise in getting it from the cob. An occasional feed of oats or wheat in a litter is good for a change, and also gives the hens something to do. About once a week aim to give the flock a liberal supply of fresh green bone, which may be obtained at the local butcher shop.

The size of my pens are 25x75 feet and are enclosed with 5 foot 2 inch wire netting, and are located in the or-

Emery's Pure Meat Meal Don't believe all we say, but just enough to buy our Poultry Foods.
Ask nearest dealer for them, and take no imitations
Write for our free booklet, "Farmers Friend"
Valuable to all farmers and ranchers,
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The Pacific Guano and Fertilizer Co. San Francisco
Successors to M. Ohlandt & Co.

El Oro Poultry Farm

Produces birds which show their worth as layers and as

Winners of Ribbons

At the Fresno Show this year they won:

Brown Leghorns—1st Cock, 1st Cockerel, 1st and 2nd Hen, 1st and 2nd Pullet. 1st Pen.

Buff Rocks—3rd Cockerel, 4th Hen.

Black Minorcas—1st and 2nd Cock, 2nd and 4th Hen.

Buff Cochin Bantams—1st Hen, 1st Cock.

Blue Andalusians—1st Pen, 1st, 2nd, 3rd and 4th Hen, 1st Cock, 1st and 2nd Cockerel, 1st Pullet.

Bronze Turkeys—4th Hen, 4th Gobbler.

Buff Orpingtons—3rd Cock, 5th Hen, 4th Pullet.

Besides these, El Oro Birds won the Bankers' Cup for the greatest number of points of any one breeder, with 66 points; Special for Best Mediterraneans. Besides that, in another special these birds literally

Took the Cake

Eggs, $1 to $3 per Setting. Stock, $1 to $5 Each

El Oro Poultry Farm Fresno California

BEMIS BARRED AND WHITE PLYMOUTH ROCKS

PRIZES WON At Alameda County Poultry Association Show, Oakland:

21 Regular Prizes.
4 out of the 5 Specials given by the American White Plymouth Rock Club.
Silver Cup for the ***best collection*** in American Class.
Silver Cup for ***best display*** in American Class.
Hines Silver Cup for 10 Best White Plymouth Rocks in Show.

I am able to ***furnish*** the ***best*** birds and eggs at moderate prices. I cannot furnish large lots for incubators.

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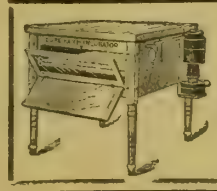

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Are known the world over for their ***Simplicity*** and ***Reliability***. It is useless to place in the hands of a novice a machine that would puzzle a scientist. That is what we do not do. We guarantee them for five years, and positively stand by the guarantee. Send for free catalogue No. 25. It is full of poultry matter.
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Winner of silver medal at Pan-American, also medal at California State Fair. Write for circular and information.
Stockton Incubator Company
G. S. Marshall, Prop. *Stockton, Cal*

Golden Crest Poultry Ranch

RANDALL & ROBBINS, Props., SANTA ANA, CAL.
At the great Los Angeles Show, in the largest class of Buff Leghorns ever shown on this coast, we won COCKS 1st, 3rd; HENS 2nd, 4th; COCKERELS 1st, 3rd, 5th; PULLETS 1st, 2nd, 3rd, 5th; PEN 2nd. Buff Leghorn Cup for best display, all ribbons from National Buff Leghorn Club for best cock, hen, cockerels and pullet. More prizes than all of our competitors combined. On W. C. B. Polish we won, Cock 2nd; Pullets 1st, 3rd, 4th, 5th, on only six entries. We won 19 ribbons, 5 specials, 1 cup at the Panorama Show, 2nd White Wyandotte Cock and National White Wyandotte Special on one entry at Panorama. At Chutes we won 2nd White Rock Cock on one entry, 4th Barred Rock Cock on one entry. Stock and eggs for sale. Send for circular showing all of our winnings.
RANDALL & ROBBINS, BOX 412, SANTA ANA, CAL.

chard. Poultry and fruit trees go well together. Fresh water, an absolute necessity, is piped to each pen. Each pen is supplied with gravel, charcoal and ground shells. My chickhouses are 10x16 and are divided in the center by a wire partition. This serves for two separate houses, and by bringing the dividing fence between the two pens on a line with the division of the chicken houses, access can be had to each pen from the separate divisions. The floor of the chicken houses is raised two feet from the ground, which gives the chickens a scratching shed to dust in. The roosts are made of 2x2 surfaced redwood and are suspended from the roof by heavy wire, about a foot from the floor. The ends of the wire are bent square to hold the 2x2 strips, which can be removed when desired. Nests are made on the outside of the ends of the chicken houses by providing a frame the full width of the building and about two feet wide. On this platform are placed orange boxes which serve as nests. A covering is made with a slanting roof, which darkens the nests and keeps out the rain. Many breeders use trap nests, which are beneficial in determining the layers and non-layers. It takes much time and patience to successfully use trap nests, but it is a practical method of finding out the laying qualities of your flock.—C. S. Redman, Watsonville.

WHY DUCKS DON'T LAY.

"Why don't my ducks lay?" is a query one often sees in the poultry papers, and the answer is usually:

"Something wrong with the feed." It never seems to be admitted that something may be wrong with the ducks.

In November a few of my ducks were laying. By confining each duck in a separate pen for one or two days I selected the layers from the flock.

These layers, seven in number, were given a pen by themselves and since then have averaged six eggs per day. As a winter record, this is very good. But I have more than 100 others, some of them young birds six and seven months old, that during this time have not layed an egg. Why this difference? Was it the feed, All were fed out of the same sack.

The explanation seems to be that some ducks are naturally good layers, while others are not. The ducks I bought to start my flock were, unfortunately, mostly of the "other" kind. Hence, while I have a few good layers, the majority of my flock are not worth their keep.

Three or four years ago the Indian Runner duck was hailed as the coming egg-producing bird for Southern California. The good old hen was to be put out of business. But where many people have tried ducks, few have found them satisfactory, and the hen seems to be in no danger of losing her prestige.

A short time ago I saw a man selling a number of nice looking ducks to a poultry dealer. "What's the matter?" I asked, "Don't the ducks lay?" "Naw," he replied, "These Indian Runners are not the great layers they are claimed to be.' There are many others whose experience is the same.

Ducks are tremendous eaters of high-priced feed, and a bird that will lay only during the spring season will yield no profit. Some ducks will lay 200 eggs per year, but many will not, and no amount or kind of feed will change a naturally poor layer into a good one.

Hereafter I will test my ducks and breed only from the best layers. In this way I hope to build up a profitable flock.—E. V. W., Orange.

No rules can be formulated for feeding all kinds of fowls, as each flock differs from others. The poultryman must determine for himself which of his hens require special foods, as breeds, egg production, ages and other conditions must be considered. Do not overlook the fact that each hen is an individual and that she has her likes and dislikes, being profitable or productive according to surroundings and circumstances.

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Quality and merit wins, and the Canton Clipper has both. Hundreds of thousands are in daily use—a lasting testimonial to their superior features.

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Your choice of three thousand young stock raised from Eastern Winners.
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Send 2c stamp for Illustrated Catalogue J.

Newbert's "Gracious"

Won at San Jose, Nov. 12, '06, in one of the largest and best comparative shows held in the state. At Oakland, Jan. 7, '07. she scored 96 3-4 and won over the best collection of pullets ever shown in California. Also won the special $25.00 cup for being the WHITEST BIRD in the show.

Both judges said that, "She was the real Leghorn and hard to beat." I also won 1st Cock, 2nd Cockerel, 2nd Pen. I entered ten birds, winning eight prizes.

I started right—let me start you right. My handsome strain will improve any flock. Remember, your best bird is always your best layer. Send for large and handsome circular, yours for the asking. Eggs, $6.00 per hundred; $1.50, $3.00, $5.00 per setting of 15 eggs. I have for sale Newbert's Wonderful Phenomenal Berry Plants, $1.00 per doz.; $7.50 per hundred.

F. M. Newbert's Poultry and Berry Farm
Palmetto Ave. - Sacramento, Cal.

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Be Careful

in buying your egg and chick food to see that you get the GENUINE A. C. W. goods. The success of the A. C. W. brand has caused various imitations. This, of course, is a compliment to us, but a detriment to the consumer, who may buy these imitations for the genuine article. A. C. W. Chick and Egg Food is sealed with a LEAD SEAL—see that this is UNBROKEN.

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Mfgrs. of A. C. W. Egg and Chick Food and all raw materials for poultry food.

How Many Turkeys to a Tom.

The question is ofter asked, how many turkeys should run with a gobbler? This question is answered differently. Some authorities say ten, some seven, others five. The number seven is probably the safe one.

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A New Walnut. Eucalyptus, Acacias, California Privet, Etc. No Fruit Trees This Season.
CATALOGUE of strictly Pedigreed Fruit Trees, Etc., will be issued during 1907. Orders may be booked at any time.

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Fruit Trees, Nuts, Berries and Grapes
We Sell All Varieties of
Roses, $2.25 per 10
Write for Catalogue

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Greenhouse and Nurseries:
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The Ornamental Garden

By ERNEST BRAUNTON

INTERPRETATING NATURE.

HOW OFTEN DO WE SEE PEOple who are able to fully understand Nature in some of her various departments. These are people who first of all have a deep grounded love for all nature, yet may intuitively lean toward some certain manifestation or mood which possesses such strange, yet strong attraction for certain individuals.

The landscape gardner, if he be born to the calling, and all too few are, should rely absolutely upon Nature to set him right when perplexed with any problem other than roads, paths and those necessary details with which man mars the beauty of the earth's reposeful surface.

All desirable landscape effects, in meadow, plant groups, shrub massing, tree groves, rockeries, water views and effects—all may be found somewhere in nature—a solution to every problem to him that hath eyes to see.

In the same way is the love for animate nature manifested, though in all these cases two factors enter—the love is reciprocal. How often do we see men or women on the farm whom the animals will follow while others repel them. Enter into conversation with such an one and he will tell you, "I just love horses," or "I was always very fond of cattle;" and so might it be traced through all departments of nature, but that is far from the object of this article.

To return to the subject proper, in your garden "work out your own salvation." Do not blindly follow the lead of any. Study nature and you will soon learn to read her aright. Note how she shields the ferns from sunsight, how give them the necessary supply of water, how well drained and what the composition and texture of the soil. Then go home and duplicate, as nearly as possible, these natural conditions, and success will attend your efforts. In the same way must you note conditions necessary to shrub and tree life and after a short time spent in such observations, the purpose and intent of nature will be revealed to you and all be made plain which had hitherto been a sealed book. Nature holds no secrets in these lines. Our lack of success with plant life is due to partial or total blindness. Though we have eyes, we see not.

THE ALMOND.

The hopes of a future happier hour
That alights on misery's brow,
Springs out of the silvery Almond flower
That blooms on a leafless bough.
—MOORE.

The ancestors of the Almond were well known as far back as in the days of the Patriarchs. This fruit formed part of the offering with which his brethren sought to propitiate the unrecognized Joseph, when their father bade them carry down the man a present. It afforded a model for one of the earliest works of art, for the bowls of the golden candlestick in the tabernacle were fashioned after its form, and a branch of the tree had the honor of being the subject of a miracle, when Aaron's dry and sapless sticks were made to blossom and to bear.

The Romans do not appear to have been very intimate with the fruit, Cato only mentioning them as "Greek nuts," and some believe that even this supposed allusion refers rather to walnuts.

The almond tree is indigenous to Barbary, where it grows so abundantly that its delicate fruit is not even reserved exclusively for the human palate, the Moors, it is said, being accustomed to drive their goats under the trees as they gather it, when the animal carefully nibbles off the skin as it falls and then greedily feed. In that, its native land, it furnishes the first fruits of the year, the blossoms appearing in January and the nuts being matured by April. Its generic name, Amygdalus, is derived from a Hebrew word signifying vigilance, because its blossoms announce the coming of spring, preceding even its own leaves, a fact which the fanciful Greeks invented a myth to account for.

"Phillis, the beautiful Queen of Thrace," so runs the tale, "had not long been the bride of Demophoon, son of Theseus, who had been cast upon her shores when returning from the siege of Troy, and whom she had kindly received and at last married, when the newly wedded husband, hearing of the death of his father at Athens, left her to proceed thither, promising, however, to return in a month. Happening to be detained beyond this time, his disconsolate wife wandered daily by the sea to watch for his return, braving even the coldest blasts of winter, until at length grief and exposures so wrought upon her that she one day fell dead upon the shore, when the pitying gods, admiring her constancy, saved her form from corruption by changing her into an almond tree. Not long after Demophoon at last arrived, and overcome with grief on hearing the mournful fate of his lately blooming bride, rushed widely to the lifeless looking tree and clasped it in his arms. The soul of his Phillis, changed as was her form, responded to him still, and quicked by his warm embrace, the tree burst forth into a joyous flush of blossoms, though even the time of leafing had not yet arrived.' '

ARBOR DAY PLANTING.

The educational results of Arbor Day endeavors, have been extensive and beneficial. Even though the celebrations have been largely exhibitions of sentiment and the planting almost wholly unsuccessful, yet pupils, teachers, and parents have learned much about trees as useful, living things, and about forests as great sources of national wealth to be protected and perpetually maintained. The smallness of the results has itself drawn attention to the inadequacy of past methods. It is due in part to lessons learned in Arbor Day planting that we are now ready to begin work with a better understanding of what is to be done.

The need of the school-grounds is for plantations of trees, cared for by such methods as will keep them constantly thrifty. The trees should be selected and planted in the most careful manner. They should be properly placed, and in sufficient number. To plant in this way requires a great deal of attention to details. It may be the work of several days. The perishable nature of trees also makes it extremely important to plant them when the weather conditions are just right. Dry, windy weather may cause several days' delay in the planting. It is therefore impracticable to depend wholly on a specified day for the work Let the trees be planted at the right time; then, if public exercises are planned, they may be held on an appointed day after the planting is completed.

Many difficulties at present encountered may be overcome by placing the direction of the planting in the hands of some person who understands fully its purposes. The pupils should assist in the work because it is for their own school ground, but on account of their lack of experience they should work under competent supervision.

As might have been expected, the results upon the school grounds have not been marked. Too often the work has been impulsive and the interest transient. Trees planted with ceremonious dignity in April have died of neglect before September, and those that survived have been left to fight unaided their battles for existence. So little attention has been paid to the choice of trees and to the methods of planting that those entirely unfit for the situation have often been used, and have been planted in places where they could not receive protection while young, or serve any useful purpose when grown.

"Well, doctor, what do you recommend?"

"I think you need mud baths."

"Mud baths? Great heavens, man, I've just come through a bitter political campaign!"

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$125.00 per Acre

to secure a 10-acre orchard that will pay later on from $800.00 to $1000.00 net profit per year per acre.

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California Horticulturally

By JOHN ISAAC, Sacramento, California

NORTHERN CALIFORNIA GROWING.

I DO NOT KNOW WHETHER THE Southern California boom has overflowed, or whether Northern California is having a boom all of its own, but certain it is, that there is an unwonted activity in all lines of industry up here, and all through the Sacramento valley. Many of the large holdings are being subdivided, the farming population is increasing, and there are very many eastern farmers now coming out and settling in this section. Irrigation has taken an active start and population is increasing rapidly. The building of new railroads has had much to do with it. There is ample room all through the Sacramento valley for a vast population and there is also some of the best land on earth there awaiting settlement. There is no question but that the farming population of the northern country is sharing largely in the general prosperity.

HORTICULTURAL INSPECTORS.

Among the many bills which have been introduced during the present session of the Legislature, is one of especial merit, and one which will appeal to the fruit growers especially. This is to provide for the increase in the compensation of the Horticultural Inspectors from $2.50 per day to $3.50. When the present law was passed the smaller sum was fair compensation, but in the years which have elapsed, wages have been steadily on the increase, until the compensation of the Horticultural Inspector is below that of the common farm laborer, and as men with some knowledge and skill are required for the work, and very much depends upon them, it is evident that the pay is absurdly low, and the natural result has been that it is very difficult to get men who are willing to do the work for the rate provided. Assemblyman Prescott F. Cogswell, of El Monte, is the father of the bill which will undoubtedly become a law.

PLUM CURCULIO.

A correspondent states that the Plum Curculio will not live in California as our summers are too hot for it. We have also been informed that the peach yellows cannot stand our California climate. This is the same old siren song we have heard from the earliest times. We have so peculiar and beneficient a climate that whatever is good for us will flourish, and whatever is detrimental will perish. Wonderful climate! But for all that, we have seen all sorts of pests live and thrive when once introduced. The black scale has spread in sections where it could not possibly live, the purple scale came from Florida and lived, although that was impossible in our climate, and in short every pest which could not possibly live here has lived, spread and played the very old Harry with us when once introduced. It may be set down as a fact that wherever the food plant of any class of insects will live, there those insects will live and thrive as does their food supply. Wherever the apple grows, the codling moth will spread, wherever citrus trees grow, their pests will also grow, if once established, and while we may believe that we have the best climate on earth and that it is good for all sorts of things, it is just as well to take no chances on its being bad for anything which we do not want. We don't want to make experiments with the Plum Curculio, the White Fly, Peach Yellows, Rosette, or any other of the hundreds of pests which we have not got. It is easier and cheaper to keep them from entering, than to rely upon our climate disagreeing with them.

PEAR BLIGHT.

Reports from the pear blight sections continue favorable, and from all accounts the campaign waged against it by the agents of the Department of Agriculture has been successful. The deep discouragement, which took hold of the pear growers in the northern part of the state two or three years ago, has given way to a feeling of confidence in the future and the general impression is that the pear industry will still live and continue in the future as in the past, to be a paying one. As indicating the faith of the growers it may be stated that some very large plantings of pears are now being made in the sections where the blight prevails.

THE CAPITOL GROUNDS.

Grove L. Johnson has introduced bills in the legislature providing for the removal of the State printing office and the unsightly old pavilion which now encumbers the capitol grounds and the taking of the whole tract for a park. This is as it should be. These grounds should be used for other purposes than a park in connection with the State capitol building, and as it is at present a great part of it is devoted to factory purposes and a big ramshackle tumble-down, lumber structure which never should have been there. With these gone the grounds can be made one of the beauty spots of the capitol city and of the state.

SUTTER COUNTY ORDINANCE.

Sutter county has followed its sister county of Yuba in the adoption of a Horticultural Ordinance, the principal object of which is to exclude the Phylloxera and the Anaheim or mysterious vine disease. The ordinance adopted is an exact copy of the one in effect in Yuba county.

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Queries and Replies

Soft-Shelled Eggs.

As a subscriber—vould you kindly give me some information through the poultry columns of your paper.

1. What is the cause of hens stretching their necks, open their mouth as if gaping.

2. What is the cause of one of my hens dropping her eggs during the night—I find them on droppings board of a morning, sometimes broken.

3. What is the cause of hens dripping their eggs in the yard—without a particle of shell.

My flock are leghorns.—Feed "Egg-food" in the morning, wheat at night in straw litter, on range during the day. They have ground oyster shells and lime in hopper.

I ask you the cause. Can you give me a remedy; you will greatly oblige, Amateur, Greenfield.

An irritation in the throat will cause the symptom you mention. The irritation may be from a cold and sore throat, some foreign substance in the throat or gape-worms, but we do not have gape-worms in this pleasant climate.

Soft-shelled eggs and eggs dropped out of the proper time are caused usually by wrong feeding. Over-stimulation by the use of spice or so-called "egg foods" tends to the production of thin-shelled eggs. Fright may hurry along the eggs before the shell has been added. Worms may increase in the intestines to such an extent as to stimulate the egg passage to push along the eggs beyond its usual distance. An over-fat hen has a tendency toward laying thin-shelled eggs, in fact this is the usual cause of soft-shelled eggs.

Provided the cause is an over-fat condition, you can meet this difficulty by providing a diet low in fat-producing elements, supplying good, sharp grit as well as oyster shell in abundance, making the birds work for their grain in deep litter giving the plenty of cut alfalfa.

A few doses of sulphate of magnesia (one heaping teaspoonful to a pint of drinking water) kept before the hens, allowing no other water on those days, twice a week will help remove the layers of fat. Avoid this unsatisfactory condition by feeding a well-balanced ration, not trying to increase the egg yield by means of any stimulant that does the work by an irritation of the egg organs, but furnish sufficient exercise to do all the stimulating necessary.—Mrs. A. B.

Bowel Trouble in Turkeys.

Dear Mrs. Basley:—Can you help me with my turkeys? We have poor luck, with bowel trouble. We have had some hatch all winter with poor results. We have had quite disagreeable weather all winter and the old turkey hens do not hover them as well as they need. Will that cause bowel trouble? Is there anything else besides lice or over-feeding that will cause bowel trouble?

We thought we would hatch some in an incubator, do you think that would be successful? I would like to know how to take care of them after they are hatched, to keep them warm enough and not have them crowd.

Do you think little turkeys that are on good alfalfa all the time need to be fed more than once a day or at all? I would like to know what the trouble is, so we can have better luck this year. Mrs. J. C.

The trouble is as you have surmised, that your little turkeys have been chilled by the cold damp weather and not being properly hovered, they may also inherit weak constitutions from their parents, but I think it is only from being chilled. I had the same trouble some years ago. You know my White Plymouth Rocks were bred to lay and when the little turkeys were being raised by a chicken hen she would desert them when very young and begin to lay. I then found that I could bring them up in a brooder, in a sheltered place and not lose one. Ever after I always brought up my young turkeys, if hatched under a hen or in an incubator, in my brooder. You feed your turkeys just right, but should not let them out into the alfalfa early in the morning, when it is wet with rain or dew. Young turkeys (and also little chickens) get bowel trouble instead of cold in the head from being chilled especially from a champ chill.

I hatched some turkeys in my incubator, but did not have as god hatches as under hens so, as the eggs were expensive I hatched under hens.

Nitrate of Soda for Lettuce.

How, under what conditions and when should nitrate of soda be applied to lettuce? In what quantity to every hundred square feet.—E. N. W., Pomona.

We have always found, in using nitrate of soda, that a great deal depends on the condition of the crop. Sometimes lettuce will make a quick growth without the use of nitrate; on the other hand, ofttimes the crop will be benefited by its use. The safest method in regard to feeding is for each grower to experiment on a small scale; this will give him a line to work on better than anyone else can advise, for the simple reason that soils vary so much in different localities. However, would recommend using nitrate of soda dissolved in water, say, a tablespoonful to a three gallon can of water, affording enough to give the bed a fair watering. Keep the water off the foliage as much as possible. The best time to use this fertilizer is after the plants are established in their permanent quarters when making their growth before heading.

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SOLITUDE.

Laugh, and the world laughs with you;
Weep, and you weep alone,
For the sad old earth
Must borrow its mirth.
It has trouble enough of its own.

Sing, and the hills will answer;
Sigh, and it is lost on the air.
For the echoes bound
To a joyful sound,
But shrink from voicing care.

Rejoice, and men will seek you;
Grieve, and they turn and go;
They want full measure
Of all your pleasure,
But they do not want your woe.

Be glad, and your friends are many;
Be sad, and you lose them all;
There are none to decline
Your nectared wine,
But alone you must drink life's gall.

Feast, and your halls are crowded;
Fast, and the world goes by;
Succeed and give,
And it helps you live,
But it cannot help you die.

There is room in the halls of pleasure
For a long and lordly train,
But one by one
We must all file on
Through the narrow aisles of pain.

—Ella Wheeler Wilcox.

A DETECTIVE'S STORY.

"We never know how a case is going to turn out," said the detective. "Sometimes we waste sympathy on people, and sometimes we don't give them sympathy that they deserve.

"Some years ago a young fellow (we will call him Lightbody—Lightbody's a good name for the sort of fellow he was) went to New York and got a position in a banking house. They said he was smart as chain lightning. At any rate, he climbed right up in the estimation of his employers, and soon he became their right hand man. But while they thought he was attending exclusively to their interests he was attending exclusively to his own. He was in everything where money is to be made or lost though where he got the capital to work with nobody knew.

"The fellow bit off more than he could chew and to save himself used his employers' funds, and about the same time Mr. Lightbody disappeared.

"A year or two after his disappearance it was reported to his former employers that he was living in a Central American state, and I was employed to go down and bring him back. The job was a delicate one, since there was no extradition treaty with the state in which he had made his home.

"Furnished with all the evidence I would need, including photographs, I sailed for Central America and on reaching my destination found that Mr. Lightbody was at the capital and a prime favorite with the Government. He had got some valuable concessions that were likely to make him rich. He had won the heart of the daughter of one of the prominent citizens, who was considered a very lovely girl.

"Of course I had letters to first-class people in my pocket, for I knew before starting that my man was cutting a heavy swath socially. I waited for some important function to let me in on an equality with the man I was after. A ball was given to which I was invited, and, getting myself up in the latest style of evening dress, I joined the throug. Of course Lightbody was there, and so was his girl. During the early part of the entertainment he was in such demand and was so devoted to his fiancee that I didn't even make his acquaintance. I saw them together frequently, and it was plainly a case of genuine love on both sides. I pitied the girl; but, as I have said, I had made up my mind to attend to business and let sentiment alone.

"Shortly before the ball broke up I joined a party of men in the supper room who were drinking champagne and smoking cigarettes. Lightbody was among the number. I made an effort to ingratiate myself into his favor and had some success. But he seemed anxious to get away, and I saw him soon after dancing with his girl. When the affair broke up I stood on the veranda keeping my carriage standing while I waited for Lightbody. Presently he came out with his fiancee and her mother, put them in a carriage, and they were driven away. Lightbody returned to the house, went inside, got his hat, came out, lighted a cigarette and was going down the steps when I stopped him and asked which way he was going. When he replied I told him that I was going the same way and would be happy to take him in my carriage. He accepted the invitation, and we got in and were driven away. We had not gone far before I said to him:

" 'Mr. ———,' calling him by his real name, 'how would you like to go to New York on the steamer with me?'

"He divined the situation at once. He made no reply for some time, then said:

" 'There's no extradition treaty between the United States and this country, and I could put you to some trouble but I'll go with you provided you won't give me away here and give me time to arrange my affairs. What do you say to that?'

" 'All I want is you. I don't want to peach on you. The steamer sails tomorrow night. Can you be ready?'

" 'Yes.'

"The next day the fellow gave out that he had been called to New York on some important financial business and said goodby to his girl, promising to be back soon. The next evening we sailed, arriving in New York in due time.

"I wondered how his girl would feel when she heard that he was an embezzler and had gone from her to state's prison. And here's where my refraining from telling her comes in. The affair for which he was wanted involved several people besides himself, and he was the only one not to blame. The others were his friends and had families. He drew suspicion away from them by flight. On his return he presented his schemes in Central America to the losers and agreed to take them in. This he did without informing on the real culprits. The losers, finding that far more money was to be made from his concessions than they had lost, accepted his terms, gave him funds, and in two weeks he was back on the isthmus more of a high financial f'ier than before. His concessions turned out to be very valuable and made him and his associates rich. He married the girl and became a permanent resident of Central America. There he is greatly respected, but in the United States he is still regarded an embezzler. He never threw the blame where it belonged.

" How do I know that he was innocent? Well, that would involve a breach of trust on my part. My profession never admits of telling secrets'.'—Frank P. Cheney.

WHY PASSENGERS ARE SLAUGHTERED.

While railroad telepraphers are paid $45 and $50 a month railroad accidents will occur and railroads will be guilty of criminal negligence.

The telegraph operator is too often a mere boy, whose appreciation of the gravity of his responsibility is not sufficient to prevent him from snatching forty winks and depending on his "call" to awaken him. Along the 223,000 miles of railway in the United States many operators sleep a part of every night on duty. Their responsibilities vary accordingly to their location upon the lines, but few of them have duties so unimportant that their negligence cannot cause wrecks. Familiarity with the Morse alphabet should not constitute a sufficient qualification for a railway telegrapher. Too often it is the sole requirement. While none but men of character and reliability should be employed, the "tramp operator," drifting across the continent, frequently secures work at a railroad station. And the train dispatcher is as weak as the weakest link in his chain of operators, no matter how capable and alert he may be.

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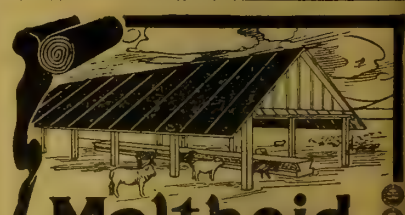

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WHITE and BUFF. Typical shape, fine layers and fertility guaranteed. Eggs for hatching. Write your wants. *A. W. Huskins,*
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Common carriers have no moral right to place the lives of passengers and train crew in the hand of irresponsible boys, yet the custom of sending green men to relieve regular operators is common, as is the custom of employing operators at salaries which do not command the services of men of character and ambition, but do attract the fly-by-night soldier of fortune who wrecks a train and takes to the bushes today only to reappear at some other point and secure another position.

There are, of course, honorable and trustworthy men whose services may be secured for twelve hours a day at $50 a month, but the calling of the railway telegraph operator should be made more remunerative to attract a more reliable class of men, and older men, and rigid examinations into the character and capability of operators should precede appointments to positions on the line. Legislation to compel railroads to fix a standard of qualifications is being talked of in Kansas, and is advocated by telegraphers. But legislation should not be necessary where improvement of the service would save in preventing damage suits and the destruction of rolling stock, far more than the increased expense for capable and reliable telegraph operators.—Louisville Courier-Journal.

GOOD ROADS AND AUTOMOBILES.

In a recent issue of the Cultivator, your editor said some good words about the growing importance of good roads. The subject is immediately connected with the proposition of how to utilize them; and when the means of transportation is considered, nothing can be thought of that is more important than the application of the automobile whose machinery is becoming daily better adapted to the various purposes for which it may be employed.

An event of the last month worthy to be chronicled, was the construction of a farm cycle, built in Los Angeles county, which will perform much of the work done in the fields without the aid of horses or of laborers. The machine is strictly an automobile, operating gang plows, harrows, or other farm implements. But the place this vehicle must occupy, is only the cultivated field or enclosure adapted to be farmed in such a way.

The means of transportation which the population of the State are to consider, is an automobile which will carry freight and passengers; a machine of each kind. The conveyance will be independent of but supplementary to our present railroad system.

Imagine an automobile transportation service which can be provided by the State, that shall cover every county of California. At all points where population must concentrate, the rapid transit facilities should be constantly increased. And as there is much danger of unnecessary monoply, which capital in the hands of a few will create, suppose this is capable of being lessened or prevented entirely by the "motor omnibus."

What could be better than a relay of coaches operating between points ten or twenty miles apart from each other? The tickets issued for the ride, to be paid for in cash, would be issued with coupons and stubs, and be transferable. The passengers would come in and go out as necessity required, arriving and departing at the relay point.

All repairs to the coaches could be made in the wayside repair shops established for the service.

For freight transportation, a different form of vehicles would of course be used, but the service would necessarily be slower, just as it is now in railroad practice. The farmer, the merchant, and the trader, as well as the settler, and miner, would find the much-desired help provided thus, which, today they are without, and which another generation will not see materialized so long as railroads alone exist.—Samuel Fox.

To Cure a Cold In One Day.

Take LAXATIVE BROMO Quinine Tablets. Druggists refund money if it fails to cure. E. W. GROVE'S signature is on each box. 25 cents.

Wise men make mistakes, but they don't repeat them.

THOUSANDS of young people will be required to carry on the volume of business incident to the marvelous era of development upon which Southern California has entered. The WOODBURY training leads directly to POSITION, PRESTIGE and PROMOTION. "The Success of the Student" is our motto. Call, write, phone.

Woodbury Business College

809 SOUTH HILL STREET, LOS ANGELES

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LIFE AND SAYINGS
BY HIS WIFE

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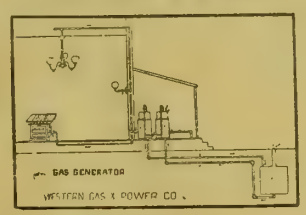
Orange County Lands Five, Ten and One Hundred Acre Tracts Improved and Unimproved Land with lots of Water. ***Price $100 per Acre and Up.*** Terms, One-Fifth Cash, balance in one, two, three and four years.
Jacob Stern, 404 Pacific Electric Bldg., Los Angeles

WESTERN GAS GENERATORS



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The most reliable and cheapest GASOLINE GAS GENERATOR ever put on the market.
AUTOMATIC SAFE ECONOMICAL.
Read what Mr. A. W. Foster, President of the California Northwestern Railway has about them:
Gentlemen:
Replying to yours of the 20th inst., I would state that the plant installed for me by the Western Gas and Power Company, on my Hopland Stock Farm, is giving entire satisfaction, and I cannot speak too highly of it. Yours truly, A. W. Foster.
Mr. Foster used an acetylene gas generator before we installed our Western.

WESTERN GAS & POWER CO. 1842-48 Seventh St., Oakland, Cal.

WITH A SIEVERT OIL BURNER

You can burn 100,000 cubic feet of air with every 130 gallons of oil; this means perfect combustion. To burn more than 100,000 cubic feet of air with 130 gallons of oil, there is a decided loss of heat. To burn less than 100,000 cubic feet of air there is a loss of fuel.
The only safe and reliable burner on the market.
Send for full particulars.

SIEVERT OIL BURNER CO. 1001 No. Alameda St., Cor. Main and Ord Sts, Los Angeles, Cal.

For a **Practical Pointer** in **Poultry Profits** use the **Principal**

They Are the Best on Earth

Principal Incubator Co., Graton, Cal.
Send for New Price List

200-250 Egg Fowls | **WHITE WYANDOTTES** | Unsurpassed Show Record

Hatchable ***EGGS*** from ***mature,*** standard-bred, ***heavy laying*** fowls is our specialty. Clear eggs replaced. Eggs for ***settings,*** by the ***100*** or by the ***1000,*** from show matings and utility matings. ***Bargains*** in ***Stock.*** Write for our ***new*** catalogue.

CAPITOL AVENUE POULTRY FARM

A. L. R. MANTZ — ***Rural 21, Box 98k*** — ***SAN JOSE, CAL.***

Incubators? ***Baby Chicks?***

Must Hatch Incubators

Hatch all the fertile eggs and produce vigorous, healthy chicks—two factors that count in the poultry busiuess. We operate the most extensive manufacturing and poultry plant on the coast, and guarantee all our products. If you are in need of anything for the poultry business, write for our illustrated catalogue "B" We have the largest hatcheries in the world, and furnish the best S. C. White Leghorns it is possible to produce.

Order Early and Get the Desired Dating. MUST HATCH INCUBATOR CO. Petaluma, Cal.

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EXCLUSIVELY

Winnings at the great Los Angeles Show, January 1 to 5, 1907:

COCKS—First and Third. **COCKERELS**—First, Second and Third
HENS—First, Second, Third, Fourth, Fifth
PULLETS—First, Second, Third, Fourth, Fifth
PENS—First and Second
CUP for Best Minorca Male, also **PRESIDENT'S CUP**

EGGS FOR SALE

PERHAM & WHEELER

Successors to Geo. R. Albers — R. F. D. 123, Lordsburg, Cal.

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Successor to Orange County Nurseries

We have a large stock of Fruit and Nut Trees, Ornamental Plants, Roses, etc.

10,000 Valencia Late and Washington Navel Orange Trees.

Postal card gets you a price list.

We also have choice property, both improved and unimproved, for sale—Orange Orchards, Walnut Orchards, and Town Property. Tell us your wants.

Orange County Nursery and Land Co. **Fullerton, Cal.**

MORSE SEEDS SPROUT

You and Nature do the rest

Alfalfa

from the best UTAH alfalfa section—clean and free from dodder and weed seeds. Also TURKESTAN alfalfa—recommended by the U. S. Department of Agriculture for dry land. Samples and prices of both, on request. If interested in CLOVER and GRASS SEEDS, and ONION SETS, write us.

Seed Catalogue now ready—send your name and your friends' names and addresses—for copies free.

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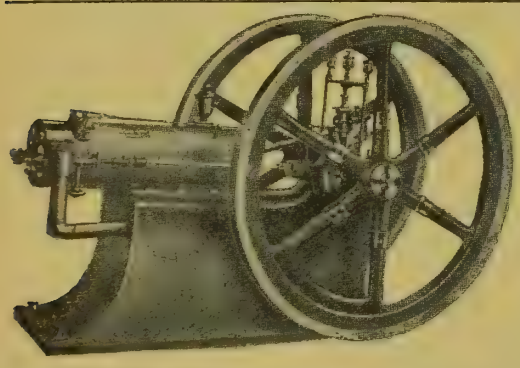

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With untried engines. Buy an engine with a ***guarantee*** of the ***lowest cost for fuel*** —the

White & Middleton

Absolutely reliable, tested and proved.

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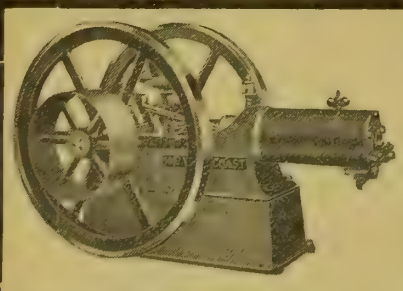
602 No. Main St., Los Angeles, Cal.



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Are very simple in construction, run smooth, start easily and the best engine on the market.

Pumping Plants and Mining Hoists

That are right in construction and price. Estimates furnished on complete plants installed. references given on application. Call or write for catalogue.

***Ward Bros.*, 205-207 N. Los Angeles St., *Los Angeles, Ca*.**

FREE CATALOGUE

Poultry and Live Stock Supplies

Grit, Bone, Shells, Blood Meal, Beef Scraps, Incubators, Brooders, etc. Winners of **Gold Medal** and three first premiums, California State Fair, 1905 and 1906, for best display and quality.

F. F. SMITH & CO. 1008 Jay St., Sacramento, Cal.

Chicks Just Hatched

We ship them everywhere. Pure Bred White Leghorn Chicks from the Best Egg Producers in the United States

CALIFORNIA INCUBATOR CO., MAXWELL, MAY 27, 1906.

Gentlemen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come so far and being so long on the way without the loss of a single one, but it is an undisputed fact that such was the case We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. CAMPBELL.

CALIFORNIA INCUBATOR CO., 907 Washington St., Petaluma, Cal.

Mission View Poultry Ranch

WHITE WYANDOTTE WINNINGS, 1906

Four Firsts out of 5; 3 Special Ribbons out of 4 and Silver Cup, the specials being given by the National White Wyandotte Club. Won all prizes on Hens but one and all Pullet prizes were won by my stock, one of my customers winning two Cockerels, 1st and 3rd, Cocks 2nd and 5th, Pens 1st, 4th and 5th. **Mammoth Bronze Turkeys and Buff Cochin Bantams, Silver Laced Wyandottes and Lakenvelders** For Sale Cheap. Address

Mrs. C. D. Hubbard Box 282 San Fernando, Cal.

The Produce Markets

Los Angeles Markets

LOS ANGELES JAN. 30 1907.

Butter

Receipts of butter picked up slightly this morning, but the market shows very little change from the advance of a few days ago.

Local Creamery, 2-lb, sq	.90
Valley Creamery, fancy	.65@80
Coast, fancy	.75@77½
Cooking	.22@24

Cheese

Cheese has been scarce for a week or more and the market is stiffening in tone although no price changes have been recorded as yet. Practically no eastern cheese has been coming in and the supply ofAnchor from Compton although some heavier is not sufficient to meet demands.

Cal. Young America, per lb	.18
California Anchor	.17
Cal. 3-lb. hand	.19
Northern	.17
Domestic Swiss	.20
Imported Swiss	.28

Eggs and Poultry

Receipts of eggs would have justified a slight decline this morning had the weather been clear, but prospects of stormy weather will reduce the supply materially and may cause prices to advance.

Eggs, fresh ranch, per doz	.40
Northern candled	.38
Fresh Eastern	.37

The following are average prices which dealers pay to producers for live weight:

Hens, per lb	.14
Young Roosters, per lb	.16
Fryers	.16
Broilers, per lb	.18
Old Roosters	.8
Turkeys	.15
Geese	.12
Ducks	.13

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lb	7.50
Prime Steers.	.5
Heifers	.4
Calves, per lb	.5
Sheep, ewes, per head	.5.25
Lambs, per head	.7.50
Wethers	.5.50

Potatoes

There has been but a slight change in the potato situation this week so far. Not the least sign of a weakening has been exhibited as was predicted there would be by some dealers on account of an over-supply which they said would soon arrive and cause a slump in prices.

Salinas	2.10@2.20
Burbank, Local	2.00
Highland	2.60
Sweets, Yellow, per sack	3.50

Vegetables

Beets, per doz	.40@60
Bell Peppers, Green, lb	.3@4
Chili Peppers, Green	.6@7
Chili, Dried, per lb	.20
Cauliflower, per doz	.40@75
Cucumbers, per doz	1.50@1.75
Cucumbers, per box	.75@1.00
Carrots, per doz	.40@60
Celery, per doz.	.40
Casaba Melons, per crate	....1.75@2.00
Egg Plant, per lb	.12
Garlic, per lb	.6
Green Corn, local, per sack	...75@1.25
Green Onions, doz. bunches	.25@30
Lettuce, per crate	.1.75
Lima Beans, per lb	.7@8
Onions, Aust. Brown, sk	....1.40@1.50
Onions, Y. Danvers	.1.25
Parsnips, per doz	.25@30
Rhubarb, per lb	.6
Radishes, per doz	.20@40
String Beans, per lb	.8@12
Sugar Peas, per lb	.10
Summer Squash, per box	.40
Turnips, doz bunches	.40@60
Tomatoes, per box	.1.00@1.35
Wax Beans, per lb	.10@13

Citrus Fruits

Lemons	.2.00
Valencias	.1.50@2.00
Navels	.1.50@1.75
Grapefruit Seedless	.3.00
Grapefruit, seedlings	.2.00@2.50

Fresh Fruits

Apples, Bellefluer, per box	....1.00@1.35
Apples, Ben Davis	.1.40@1.50
Pears, Bartlett, per box	.3.50@4.00
Pears, Winter Nells. per lb	.6@7

Dried Fruits

Evap. Apples, fancy, per lb	.9½
Apricots	.17
Peaches	.11@12½
Pears	.13
Plums	.11
Prunes, fancy	.7@9

Beans, Dried

Limas, No. 1, per cwt	.5.50
Pink No. 1	2.65@2.80
Lady Washington	.2.90@3.00
Small White	.3.60@3.75
Black Eyes	.4.50@5.00
Garvanzas	.4.25@4.50

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb. cans, lb.	7½@8
Extracted, white	.7½
Light Amber	.7
Comb, water white, 1-lb fms	.16
Light Amber	.14
Beeswax	.25

Nuts

Almonds, new, per lb	.19@20
Peanuts, Virginia	.7
Peanuts, California	.6½
Walnuts, No. 1, S. S.	.14@15

Hay

Barley, No 1	.14.50@16.00
Barley, No 2	.11.00@12.00
Alfalfa, Local, per ton	.14.00@16.00
Plain Oat Hay, No. 1	.18.00@20.00
Plain Oat Hay No. 2.	.9.00@15.00
Wheat No. 1	.14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, No. 1, per cwt	.1.40
Barley (to producer)	.1.00@1.05
Rolled Barley	.1.30
Corn, per cwt	.1.40
Cracked Corn	.1.45
Feed Corn Meal	.1.45
Shorts	.1.45
Bran	.1.30
Oil Cake Meal	.2.75
Cocoanut Meal	.1.50

San Francisco Markets

SAN FRANCISCO, Jan. 29, 1907.

Butter.

California, ex. per lb	.44½
California, firsts	.36
California, seconds	.28
Packing stock	.20

Cheese

New California, fancy	.14
Cal. Young American, fancy	.15

Eggs and Poultry

Fresh Ranch Eggs	.50
Eggs, first. per doz	.38
Hens, per doz., small	.5.50@6.00
Hens, large	.6.50@8.50
Young Roosters, large	.6.00@8.00
Young Roosters, small	.4.50@5.50
Old Roosters, per doz	.5.00@5.50
Fryers, per doz	.5.50@6.00
Broilers, per doz.	.3.00@4.00
Ducks, young	.6.00@8.00
Geese; per pair	.2.00@3.00
Turkeys, per lb	.16@18

Live Stock

Steers, No. 1	.8@8½
No. 1 Cows and Heifers	.5½@6
Hogs, 80 to 130 lbs	.7¼@7½
Hogs, 250 to 350 lbs	.7½
Calves, per lb	.4@5
Lambs, yearlings	.6@6½

Potatoes

Oregon Burbank	.1.45@1.75
Salinas Burbanks, ctl	.1.50@2.00
Rivers	.1.50@1.65
Sweet Potatoes, ctl	.2.50@2.75
New Potatoes	.4.00

Vegetables

Asparagus, per box	.125@1.50
Cucumbers, per doz	.1.00
Chili Peppers, Green	.50@85
Egg plant per box	.3.00@3.50
Green Peas, per lb	.9@10
Summer Squash, large crate	..1.50@1.75
Onions, Red, per sack	.1.00@1.25
Onions, Yellow	.1.00@1.25
Peppers, Green, Bell	.40@75
Rhubarb, per box	.75@1.00
Summer Squash, large crate	.2.00
String beans	.15@17
Tomatoes	.1.65@1.75
Wax Beans	.15@17

Citrus Fruits

Lemons	....75@2.50
Valencias	.300@400
Sweets	.3.25@3.50
Navels	..1.50@2.75
Seedlings	.2.50@3.00
Grapefruit	.2.00@3.50
Limes	.3.50@4.00

Fresh Fruits

Apples, fancy, per box	.1.25@2.50
Apples, common, per box	.75@1.00
Blackberries, per chest	.3.00@4.50
Cantaloupes, large crate	.40@1.00
Grapes, Seedless	.60@90
Grapes, Black	.40@75
Grapes, Muscats, crate	.100@1.25
Grapes, Tokay	.80@1.10
Plums, per box	.75@1.00
Pears,	.1.50@2.00
Prunes, per box	.60@85
Raspberries, per chest	.12.00@14.50
Strawberries, Longworths	..7.00@8.00

Dried Fruits

Apples (evap.)	.7@8
Apricots, per lb	.15@18
Figs, white	.2½@4
Muscatels (loose)	.7@8
Prunes	.2@2½
Peaches	.10@12½
Raisins, seeded (1906)	.8½@10
Thompson, unbleached	.7½
Thompson, bleached	.9@11

Beans and Seeds

Limas, No. 1	4.25@4.40
Pink	1.95@2.10
Large White	2.25@2.50
Small White	2.80@2.95
Black Eyes	4.50@4.65
Red Kidneys	3.40@3.75
Bayo	2.00@2.30

Hops

1906 Crop (future lb)	10@15

Nuts

Almonds, new	15@17½
Peanuts, Virginia	6½
Peanuts, California	5½@6
Walnuts	11@15

Honey

Clear White Comb	16½
Amber	14@15
Extracted	5½@7

Hay

Barley, No 1	12.00
Barley, No 2	10.00
Alfalfa, local	10.00@13.00
Oat	12.00@18.00
Wheat No. 1	19.00@23.00
Wheat, No. 2	13.00@16.00

Grain

Wheat No. 1	1.27@1.28
Barley No. 1	1.12@1.15
Corn, small yellow	1.50@1.55
Corn, yellow	1.27@1.30
Oats. White	1.45@1.55
Oats, Red	1.30@1.75
Ground Barley, per ton	24.00@25.00
Bran, per ton	20.00@22.00
Straw, per bale	60@80
Feed Corn Meal, per ton	32.00
Cracked Corn, per ton	32.00
Oil Cake Meal, per ton	38.00
Cocoanut Meal, per ton	25.50
Calalfa Meal, per ton	21.00
Mealfalfa, per ton	21.00

Citrus Markets

NEW YORK, Jan. 29.—The market is very much depressed on 80s to 150s, Poor stock selling very low. Weather clear and cool. Twenty three cars sold today. The first real taste of wint r has touched New York during the week just passed. A snowfall of nearly a foot impeded all traffic and rendered it practically impossible to do anything in the fruit business for several days.

A snowstorm of any magnitude in New York seriously interferes with the transaction of business. Fortunately the storm was not accompanied with dangerous cold so the losses sustained were chargeable only to delays in shipping.

TheJamaican disaster has created a good deal of discussion in this market during the week, partly because of the acquaintances which some of the fruit men have there and partly because of the effect it may have upon the fruit trade. Of course the damage if any, will not be felt this year as the season for Jamaica oranges is practically over.

The lemon trade has acquired a sudden and wholly unexpected interest. At the sale last week of 15,000 boxes of Massina and Palermo lemons, the auction was marked by active bidding, increased prices and much excitement. It is said by those who had been long in the business that they never saw such excitement at this season of the year. From the opening of the sale to its close buyers were on their feet bidding excitedly for the different lots offered. Prices advanced 15 to 20 cents a box as compared with the last sale and the auction was strong throughout. There was no weakness and no dullness.

Offerings of oranges have not been large and while there has been weakness in the larger sizes, intermediate sizes have declined and there has been some complaint of the quality of present arrivals. The conditions which have governed the market are not essentially different, but for some unaccountable reason the tendency at present is to ignore California and buy Florida.

It is stated in private letters from Florida that cold, wet weather has prevailed and that this has interfered somewhat with the picking of fruit. It is expected that actual shipments will fall below early estimates, though it is impossible to say how much until the extent of this weather injury is known. It is said that the inferior fruit has all been shipped, but that there is a considerable quantity of good quality stock to come. A car of Deerfield Grove Floridas were offered during the week. They brought record prices, as the figures show—176s, $6.87½; 150s, $5.00; 176s, $3.50@$3.87½; 216s-250s, $3.12½@$3.25.

Grape fruit in the same shipment sold high as well. The figures were—28s, $5.26½; 36s, $4.37½@$5.75; 46s, $5.75; 54s, $5.87½

The following are the prices obtained today (January 29.)

NAVELS—

Emerald, T. I.	$2.40
Poinsettia, ex.	1.95
Triumph	2.15
Victory ex ch	1.85
Artillery ex ch	1.60
Magic Isle, ex ch Strachan F. Co.	2.05
Don, ch, Strachan F. Co.	1.85
Gold Buckle ex ch R. H. Fruit Ex	2.45
Blue Seal ex. ch. A. C. G. F. Ex.	2.40
Red Sheild ex ch A. C. G. F. Ex.	1.80
Green Crown, st. A. C. G. F. Ex.	1.80
Stork ex. ch. S.A. Fruit Ex.	2.35
Stag. ex f. A. C. G. F. Ex.	2.25
Pointer, ex. ch. A. C. G. F. Ex.	2.45
Pointer, T. I. A. C. G. F. Ex.	2.00
Lochinvar R. H. Fruit Ex.	2.20
Belt, st. R. H. Fruit Ex.	2.00
Pocahontas, f. Zante Citrus Assoc.	1.85
Hiawatha ch. Zante Citrus Assoc.	1.85
Rivera	1.85
Stock Label	1.60
Bonanza	1.75
National, st. E. B. Leach	1.55
Whittier, ex ch. S. T. F. Ex.	2.05
Goldfinch S. S. F. Ex.	1.70
Whittier, ex. ch. S. T. F. Ex.	2.55
Whittier ch. S. T. F. Ex.	2.30
Magnum Bonum, T. I. J. A. M.	2.45
Magnum Bonum f. J. A. M.	2.45
Magnum Bonum st. J. A. M.	2.20
Mission Bell ex. ch. Chapman	2.15
Lion Head ex. f. I. L. Lyon	2.30
Gypsy Queen ex f. M. & G.	2.20
Flower. o. r. Upland District	1.95
Flower ch. Upland District	1.95
Noname Carruthers	1.75
Orchard, T. I. National O. Co.	3.10
Orange o. r. National O. Co.	3.10
Standard, st. National O. Co.	2.60
Valla Vista, f. Hemet District	2.25

Yesterday (Jan. 28.) the market reports were as follows: The market is very weak and is 25 cents to 50 cents lower on 80s to 150s. Easier and lower in spots on 76s to 250s. Poor stock is selling very low. The market closed weak. Thirty-four cars of oranges and one car of lemons sold today. The weather is cool and clear.

NAVELS—	AV.
Ocean, fy, F H Speich & Co	2.15
Fountain, ch, F H Speich & Co	1.95
Santa Fe, st, F H Speich & Co	1.75
Signal, ex, fy, Stewart Ft Co	2.45
La France, ch, J S K Covina	2.05
Old Mission, fy, Chapman's	2.40
Old Mission, ch, Chapman's	2.05
Gold Eagle, st, Chapman's	2.05
W. Highlands, o. r. Highland	2.45
W. Highland, ch , Highland	2.25
Standard, st, Highland	2.05
Mountain Lion, fy, F H Speich Co	2.25
Not Named Carruthers	1.85
Not Named K., Lordsburg	2.05
Not Named Azusa	1.90
Criterion o. r. Penn Fruit Co	2.25
Wolf, st, Penn Ft Co	2.15
Los Palmas, ex, ch, S. Marino Gros	2.30
Orchid, fy, Altland Ft Co	1.95
La Hermosa, fy, Hasson Bros.	1.80
Standard, st, Hasson Bros.	1.75
Signal, ex, fy, Stewart Ft Co	2.50
Warrior, ex, ch, Stewart Ft Co	2.20
Redlands.	2.50
Ruby, fy, C C U	1.80
Badger, ex, fy, C C U	3.05
Emerald, T. I., ex, fy, C C U	2.65
Halo, fy, C C U	2.10
Truth, fy, F H Speich & Co	2.75
La Paloma, ch, F H Speich & Co	2.30
Foothill	2.10
Golden Flower, ex, fy, Red G O A	2.55
Golden Gate, ex, ch, Red G O A	2.35
Florencia, fy, J M Riley, Azusa	1.75
Golden Orange Riverside Ex.	2.25
Setter A H Ft Co	2.30
Gold Buckle, ex fy, R H Ft Ex	2.55
Blue Seal, ex, fy, A C G Ft Ex	2.35
Red Shield, ex, ch, A C G Ft Ex	2.30
Butterfly, ch, Covina Ft Ex	2.20
Blue C., T. I. Covina Ft Ex	2.05
Blue C., fy, Covina Ft Ex	2.20
Cougar, ch, Covina Ft Ex	1.95
Iris, ex, fy, D. M. Ft Ex.	2.55
Violet, ex, ch D M Ft Ex	2.45
Goddess, ex, fy, S. A. Ft Ex	2.10
Blue C., fy, Covina Ft Ex	2.10
Red C., ex, ch, Covina Ft Ex	2.10
Uncle Sam, ex, fy, Riverside Ft Ex	3.50
Fiesta, ex, ch, Riverside Ft Ex	2.15
Stock Label, st, Riverside Ft Ex	1.90
Coyote, ch, O K Ft Ex	2.00
Blue Jay O K Ft Ex	1.75
Laurel, fy, Q C Ft Ex	1.95
Corona Lily, Q C Ft Ex	1.65
Gold Finch S S Ft Ex	1.90
S S., ch, S S Ft Ex	1.65
Lochinvar, ex, ch, R H Ft Ex	1.95
Gold Hill T C Ft Ex	2.15

LEMONS—	AV.
Gavilon, fy, F H Speich & Co	3.05
Orchid, fy, Altland Ft Co	2.65

Boston Market.

BOSTON, Mass., Jan. 28.—The market is easier and the weather is favorable. Eleven cars on tracks.

NAVELS—	AV.
La Mesa, ex, fy, Riverside Ex	3.00
Sentinel, T. C. Ft Ex	2,55
Sphinx T C Ft Ex	2.40
San Juan, o. r. Fair Oak Ft Co	2.65
Cosmos, o. r.	2.45
C. S. O., S. B. Ft Ex	2.15
Extra Choice, ex, ch, T C Ex	2.35
Choice, ch, T C Ex	1.90
Squirrel, fy, A H Ex	2.30
Florence, fy, Riley	1.95
Cock, C K Short	2.40
Rose, ex fy, Redlands O G A	2.90
Clover, ex, ch, Redlands, O G A	2.65
Criterion, o. r. Penn Ft Co	2.65
Wolf, st, Penn Ft Co	2.40
W. Highlands, o. r. Highland Dist	2.30
W. Highlands, ch, Highland Dist	2.15
Crafton, fy, Stewart Ft Co	2.70
Hawarden, fy, Hawarden C A	2.30
Arch, ch, Hawarden C A	2.10
California Orange	2.20
Laverne Home, LaVerne Cit. Assn	1.80

LEMONS—	AV.
Visalia, fy, T C Ex, Lemon Cove	3.20
Lemon Cove, ch, T C Ex	2.90
Choice, ch, T C Ex	2.80

Cincinnati Market.

CINCINATI, Jan 28.—The market is weak. Weather cold. One car on track.

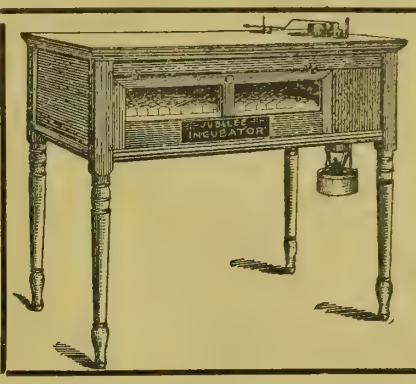
LEMONS -	AV.
Oak Leaf, ch, T C Ex	2.30
Full Value, st, T. C. Ex	2.20
Poinsettia, fy, C C U	2.00
Marguerite, ex, ch, C C U	1.45

Citrus Fruit Shipments.

LOS ANGELES, Jan. 28.—Oranges, 157 cars; lemons, 7 cars. Total to date this season, 4173 cars, of which 548 cars are lemons. Total to same date last season, 5799 cars, of which 727 were lemons. These are the corrected shipments to date, except that the Salt Lake has not reported since Friday of last week.

Arizonas, $2.85; half-boxes, $1.65.

The orange crop at Fillmore this season will equal if not exceed that of the past season. The navels are above the normal while the valencias are somewhat light. Navels are bringing about $1.10 per box.



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Ask those who ought to know! Ask business poultrymen! They will tell you that for business results in Incubating and Brooding

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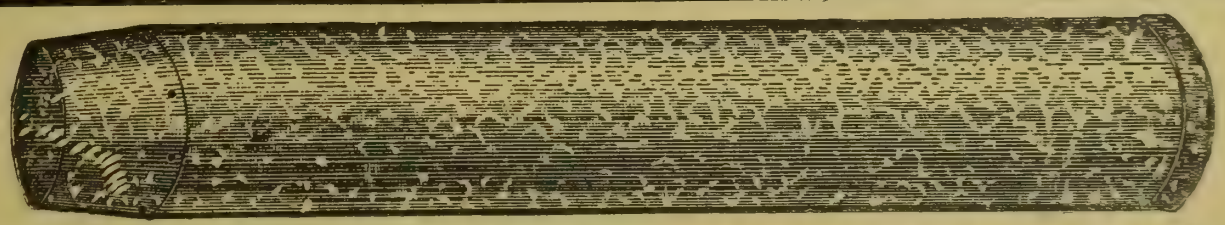

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SAVES WATER, GRADING AND TIME

The *only* way to *Irrigate Alfalfa.* *Cheaper* than *Flumes.* This is only *one* of our *specialties.* We make *Riveted Water Pipe* in lengths of *Ten Feet* from *Single Sheets.* Let us *prove* to you that we make *Pipe* and *Tanks Right.* WRITE FOR CATALOGUE.

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632 Pacific Electric Building — Los Angeles, California

DON'T BUY GASOLINE ENGINES Until You Investigate "THE MASTER WORKMAN" a two-Cylinder Gasoline Engine

Superior to all one-cylinder engines. Revolutionizing gas power. Costs Less to Buy and Less to Run. Quickly, easily started. No vibration. Can be mounted on any wagon at small cost. Portable, stationary or traction; 5, 7, 10 and 15 horsepower engines in stock at Oakland. Mention this paper. Send for Catalogue. THE TEMPLE ENGINE CO. Mfrs., David Rutherford, Agt., 1396 Harrison St., Oakland, Cal. This is our 53d year.

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We can deliver the size you want without any delay.

Big Supply of Extras

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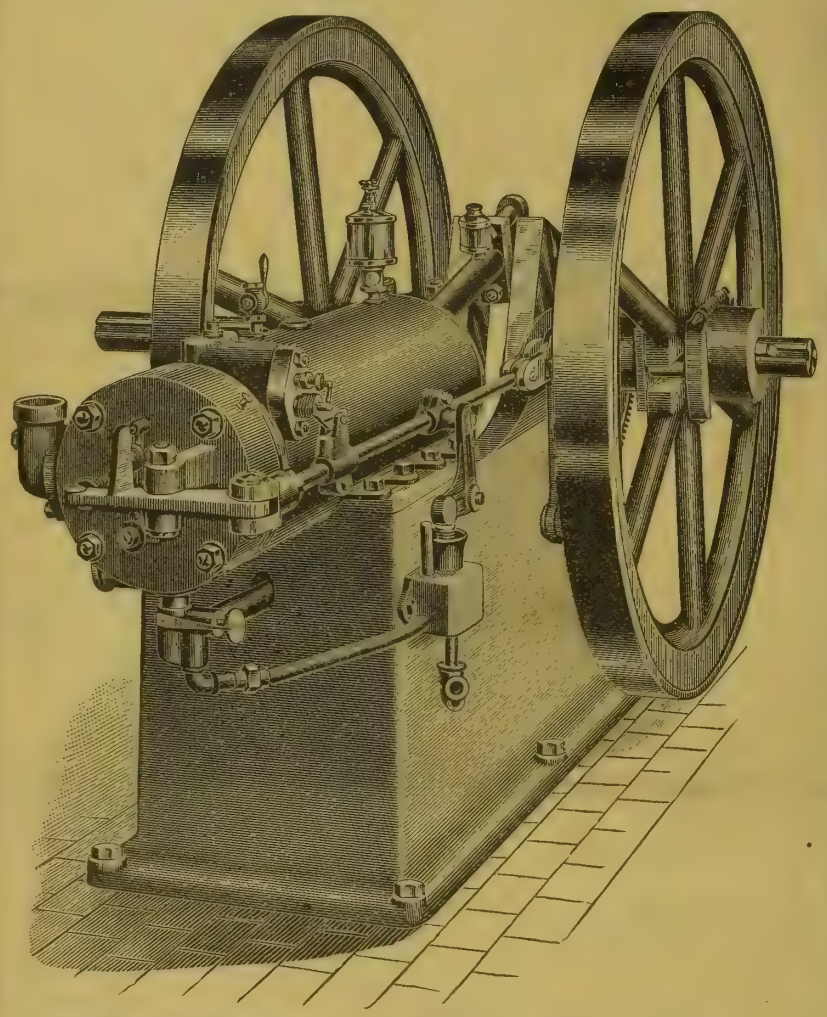
and we can meet the demands of our customers.



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Come in and see one run for yourself. If you can't come in we will be glad to call with an automobile and take you to see one in operation.

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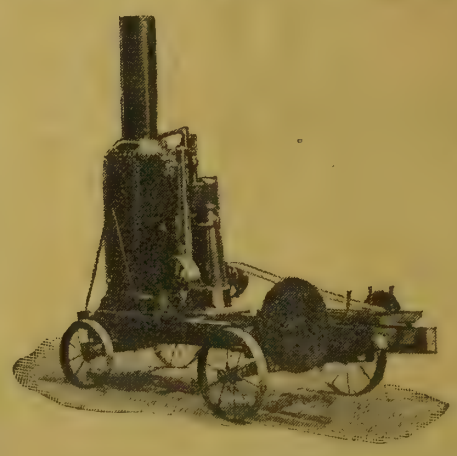

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Peerless Steam Boilers and Engines Mounted on trucks.

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Complete Irrigating Plants.

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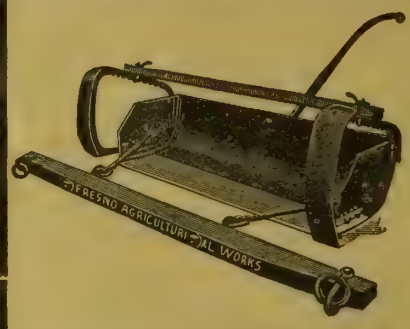

Fresno Scrapers

Our competitors all use the name Fresno to help sell thir scrapers, acknowledging the superiority of the Fresno. We make the only GENUINE FRESNO SCRAPERS.

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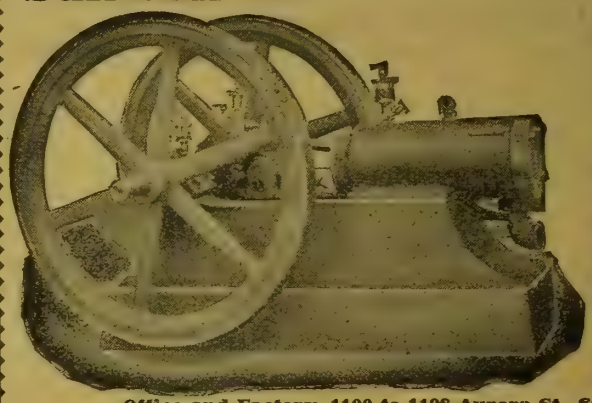
FRESNO AGRICULTURAL WORKS

Fresno, California

Samson Gasoline and Distillate Engines



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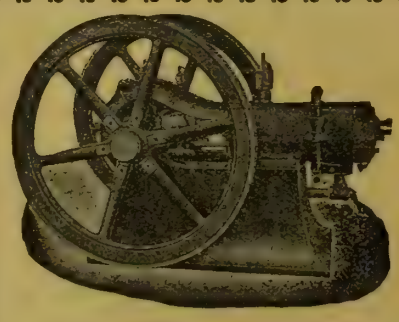

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Four Carloads have arrived since the Fire

A First Class Engine at a Moderate Price

Centrifugal Pumps
Three Carloads in Stock

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UNIVERSITY OF ILLINOIS

California Cultivator

Los Angeles February 7 1907 San Francisco

Corn Culture in Central California

Corn Field on King's River, Near Lemoore Courtesy of Nares & Saunders

IT IS gratifying to note on every hand that the farmers of California are rapidly taking a greater interest in the improvement of their corn. Questions are constantly being asked as to methods of improvement and where good seed of improved varieties can be secured. That many farmers are now willing to pay good prices for good seed corn is a healthy sign.

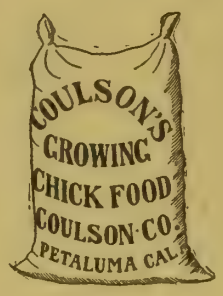
The average production during the last ten years has been very much smaller than it should be. Experiments show that the average yield might easily be very materially increased by a combination of a more careful seed selection, better cultural methods, and proper attention to the maintenance and improvement of the fertility of the soil.

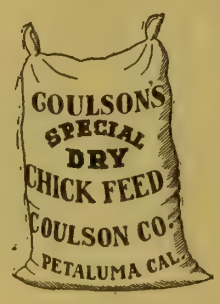
The prospects for improvement are very bright. Our farmers are awakening to a belief in the possibilities, and are beginning to make an effort in the right direction. We could point to quite a number of farmers in the State, working on average soils, who are producing a better crop every year, and their methods are not by any means as good as they might be. Large areas of the better lands are capable of producing, and are producing, even with comparatively poor methods, corn which rivals that of the Mississippi Valley, and in proof of this we would call the readers' atention to the above illustration of a field on the Laguna de Tache Grant in Kings County.

There is no crop that is more responsive to more careful selection of seed and better methods of treatment generally than is corn. A difference of from five to ten bushels per acre in productiveness is easily made and the crop of the State could easily be increased by several thousands of bushels in a single season without increasing the acreage, and at practically no greater expense. Conditions in many parts of California for corn production as to soil and climate are, for the most part, excellent and there is no adequate excuse for the low average yields. If every farmer would make a little effort, wonderful improvements could be quickly produced.

Lands that go through the spring until corn planting time without frequent surface tillage and the establishment of a good soil mulch, loses tons of water daily per acre by evaporation, not infrequently almost enough within a few weeks to mature the crop. A harrow or weeder will be effective in this work if used often and just as soon as the weeds come through the ground.

This method of tillage is comparatively inexpensive and may be practiced in crossing the field in any direction after the corn is planted and before and after it is up, without damage to the crop, until it is large enough to work with a regular cultivator. By following this method the most difficult and ordinarily expensive part of the tillage will have been accomplished by the time the plants are large enough for the use of the regular tillage implements. The mere killing of the weeds will then seem of minor importance and tillage will be looked to more for its effect on the physical condition of the soil than as a means of freeing the field from foul growth. Under hot California summer sun tillage for conservation of soil moisture becomes a necessity





Coulson's Growing Chick Food

Is a mash feed for the growing chicks, designed for feeding when you leave off feeding Coulson's Special Dry Chick Food, composed of articles, each the best in its class, combined in the correct proportion to form

A PERFECT BALANCED RATION

It contains blood meal, meat meal, bone meal, and other articles rich in protein, and the other elements, and is the feed you need to make your chicks excel in size and weight and enable them to become strong, vigorous and heavy-laying fowls.

COULSON'S GROWING CHICK FOOD WINS OUT

San Marcos, Cal, July, 23, 1906.
Gentlemen:

I tried COULSON'S GROWING CHICK FOOD exclusively my first year in business on Brown Leghorns. I sold the cockerels as broilers at nine weeks, averaging 2 pounds, 3 oz. each.

I tried my own mixture of feed the next year and took the same care of the chicks, and sold 75 cockerels as broilers, weighing 105 pounds, making an average of about 1 1-4 pounds each.

Having tested at my own expense the two methods I have concluded that COULSON'S FOOD is superior.

(Signed) J. B. HOOVER.

Coulson's Special Dry Chick Food

Is acknowledged by all The Best and most Reliable Feed for Baby Chicks.

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ONLY HIGHEST QUALITY GRAINS, ETC,, USED

Special Dry Chick Food contains numerous different seeds adapted to needs of the little chicks, besides meal, charcoal, bone and many other necessary articles, each in Granulated form making

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CANNOT PRAISE IT ENOUGH

"I cannot say enough in writing in praise of your Special Chick Food. It is just fine. I never saw chicks do so well before."

J. S. SCOTT, Madison.

PULLETS LAY EARLY

"I have fed your Special Chick Food and Growing Chick Food to all my stock with one exception. I tried one lot of 350, and fed them my way of raising chicks back East. Results just fair. The other were fed up to three months on your Special Chick Feed, and the results were a surprise to me. The birds were large and the cockerels out of one lot I sold to the California Market and got a big price, with the request to send on to them at any time I had more cockerels of the same quality."

Respectfully, A. P. WARD,
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USE COULSON'S AND BE SATISFIED

SPECIAL OFFER.

Where Coulson's Special Dry Chick Food cannot be obtained from local dealers, we will ship, freight prepaid to any railroad station in California, 100-lb. sack for $4.00, or 200 lbs. for $7.50, cash with the order.

Coulson Poultry and Stock Food Company

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HUMPHREY'S

ENTIRE FLOCK OF

Famous Prize Winning

White Plymouth Rocks

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Sold to Arthur J. Little

In this flock are the following prize-winners at the late Los Angeles show, the largest show ever held west of Chicago—2036 entries—2nd, 4th & 5th Cocks; 1st, 2nd 4th & 5th Hens; 2nd, 3rd & 5th Cockerels; 2nd, 3rd, 4th & 5th Pullets; 1st, 3rd & 5th Pens; special for 10 best pullets in show.

This in connection with my present large flock is conceded by breeders and judges as the

Best Flock of White Plymouth Rocks

west of the Rocky mountains if not in the United States.

Champion White Rock Hen
"QUEEN B"

I am offering for Immediate Sale at a Special Bargain—

125 Extra Choice Cocks and Cockerels

AND

400 Hens and Pullets 400

Will sell singles, pairs, trios, or pens; will have birds mated for best results by expert breeders and judges of White Plymouth Rocks.

Eggs for Hatching

From birds that won as follows, at the 1907 Los Angeles show: 2nd, 3rd, 4th & 5th Cocks; 1st, 2nd, 3rd, 4th & 5th Hens; 1st, 2nd, 3rd 4th & 5th Cockerel; 2nd, 3rd, 4th & 5th Pullet; 1st, 2nd, 3rd, 4th & 5th Pens. Special for best 10 Pullets in show, all varieties competing.

23 Out of a Possible 25 Prizes

Never in history have so many prize-winners been owned by breeder.

$2.50 for 15, $10.00 per 100

From special matings containing my very best prize-winners $10 per 15. Correspondence carefully answered. Visitors welcome.

Arthur J. Little
Monrovia, Cal.

Get off at Mayflower, walk north two blocks, thence West two blocks to ranch

California Cultivator

Vol. XXVIII—No. 6 Los Angeles, California, Thursday, February 7 1907 Subscription $1 a Year

The Improvement of Citrus Fruit Varieties

By E. J. Wickson, Dean of the College of Agriculture of the University of California and Acting Director of the University Experiment Stations, at the Special Citrus Fruit Institute in Riverside, January 22-24, 1907.

THE possibility of improvement of varieties of citrus fruits is obviously conditioned upon opportunity manifesting itself in desirability of different types, forms and characters from those now familiar to the commercial or amateur grower. It is idle in this stage of the advancement of citrus fruit production in California simply to indulge in a general exhortation of improvement or to suggest that change is desirable because it may secure something different. It is also true, as may be insisted upon later, that radical changes in the characters of varieties, which citrus plant breeders are attaining in the Eastern and Southern States, are not necessarily of any local value to California, and, from our point of view, may not constitute any improvement at all. We have followed a long and devious path of our own toward the excellence which we now possess and reference to it may be instructive to newer Californians.

It was my privilege as a young man to participate in the citrus fairs which were strong promotive and directive agencies in the early development of orange and lemon growing in Southern California. I remember the first held in Riverside nearly thirty years ago. Recent comers cannot appreciate the eagerness, the effort for close and correct discrimination, the enterprise to secure everything which had promise in it and to bring it to judgment, which were characteristic of the argonauts of Riverside and of the rival citrus colonies who ransacked the world to secure the golden fleece not of Kolchis, but of citrus excellence, which should prove effective in the success of their unique horticultural enterprises. The result of this world-search brought oranges and lemons from China, India, Persia, the Mediterranean islands and countries, the Gulf coast of the South, the West Indies and Mexico and from far and wide through Oceanica, until there existed in Southern California thirty years ago a larger collection of citrus fruit varieties than in any other single country under the sun. How the visitors at the fairs admired and praised; how the judges at the fairs analyzed and condemned them by dozens, reserving only a few for tentative favor. Praise was meet from the idle; merciless criticism was the only protection for those who were striving to lay the foundation for a livelihood and a competence. And so the motley crew of citrus varieties began to fall before expert judgment which, it must be acknowledged, was strikingly accurate and impartial because those who were called upon to execute it were trained to quick and broad conclusions through their previous participation in commercial, financial, educational and other professional affairs. The men and women who achieved the success of the citrus colonies of Southern California possessed probably a higher order of intelligence and a richer experience than were ever summoned to a single agricultural undertaking before.

Individual and committee decisions and growers' early results saved a few of the scores of varieties of oranges and lemons for wider and longer trial. Local pride intruded measurably also. Each district was willing to send its champion to tilt for the awards so long as chance remained to it, and local names were proudly given. Let me call the roll to awaken the memories of the pioneers: "Asher's Best," Wolfskill's Best." "Mayberry's Premier," "Baldwin's Favorite," "Wilson's Best," "Kerchevals Queen," "Riverside Navel."—These were some of the names to conjure with for prizes twenty-five years ago, because all these appealed to local pride and loyalty. There were a few more of general growth at that time, but they were neither here nor there. Out of the throng came one to survive, the Riverside Navel; but to become the universal champion it must forsake its early advocates and promoters and stand forth the Washington Navel orange of California.

I am indulging in these historical references to emphasize a fact which seems to me of ruling importance in this discussion and that is that California has attained singleness of purpose in the matter of citrus fruit varieties by a rigid and long continued process of selection, beginning with pioneer growers, following with pioneer traders and shippers, following again with analytical chemists, consumers and the general development of commerce and investment—every phase of it exercising the principle of selection in its own way, until, on the basis of its quality and characters and the wealth produced, the Washington Navel is the greatest orange in the world, which it was the dream and ambition of the pioneers to attain by their devoted and discriminating effort.

In order to be a little more specific as to the progressive rejection of varieties once esteemed, let me refer to records which I keep of the kinds which in any year seem to command attention of large commercial planters. The following is the number of such varieties in each of the recent years named:

	Oranges.	Lemons.
1890	22	9
1900	8	5
1905	2	3

I disregard in all years a few varieties which are either untried or appeal only to amateurs or are special types which certain growers plant in a small way for special trade. The two oranges which stand large are, of course, the Washington Navel and the Valencia Late; the three lemons are Eureka, Lisbon and Villa Franca, the first being greater than the other two combined and becoming relatively greater. There are, of course, more varieties of oranges and lemons commercially grown and they have some distinctive values which may bring them revival, but the contrast is limited to those largely planted at the time stated, because a man's belief is based not so much upon what he has as upon what he will pay to have.

It may be taken as established that close and long continued selection has given us two varieties which are of acceptable type and that these types are not to be wisely departed from. Each, however, is susceptible of improvement and it is interesting that each has its strength and weakness. In an effort during the last year to secure the conclusions of experienced growers and propagators as to what remained to be desired in the way of commercial varieties of the orange, I received the following replies from many different people, which I condense to a single declaration to each:

"A later Washington Navel to be good after May 1st; an earlier Washington Navel to be good before January 1st; a Washington Navel that will hang on the tree like the Valencia; that will not crack on the tree; that will stand hot sun better; that will be free from puffing, as the Valencia."

"A Valencia that will not turn green after maturing; a Valencia that will bear more regularly."

"A large seedless variety to bridge the gap between the Washington navel and the Valencia, and displace seedlings ripening at that time; also a variety that shall be as good as the navel and late as the Valencia."

Here we have each variety described, in part, in the terms of the other, and new varieties described in the terms of both. It is very clear that we have come to a definite attainment of what is desirable in a commercial orange for our California purposes and that whatever we do for improvement should include no serious effort to break from this type, but rather to enforce it upon any disposition toward variation.

Practically the same condition prevails in our approved varieties of lemons, for the following are described as desirable improvements:

"Increased disposition in the Eureka and Villa Franca to bear summer fruit and with resistance to frost like the Lisbon; a Eureka with more uniform shape, smoother skin and color like the Lisbon; a Lisbon with fewer or freedom from thorns like the Eureka."

In lemons then, no departure is needed from the type which has been determined by selection hitherto, but there may be new characters within the type. Before final suggestion is undertaken concerning this effort a brief reference to the asurance that we have correct types for our purposes may be pertinent.

The Washington Navel orange as it goes from California into the world's commerce is a combined product of grower's skill and climatic conditions operating upon its own natural qualities and characters. Neither of these factors alone could achieve its present position. The navel mark is neither peculiar to it nor determinative of it, for there are other navels which are inferior here and our navel is inferior elsewhere—even in Bahia, whence it came, it has no such quality and standing, because in coming to California it passed from humid, tropical to arid, semi-tropical environment. The tropical orange is not in the same class with the semi-tropical from the point of view of commerce. Trade in tropical oranges is local or limited; trade in semi-tropical oranges is world-reaching. The orange produced in an arid, semi-tropical climate is dense and compact, firm and better in keeping and carrying characters. It is also of more sprightly flavor and richer

Continued on page 137

Cause and Effect

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"MOCOCO"
FERTILIZERS.
order direct.
Pamphlet and Price-List free on application.
Accept no substitute; insist on having "MOCOCO"

Orange County Nursery & Land Co.

Successor to Orange County Nurseries

We have a large stock of Fruit and Nut Trees, Ornamental Plants, Roses, etc.

10,000 Valencia Late and Washington Navel Orange Trees.

Postal card gets you a price list.

We also have choice property, both improved and unimproved, for sale—Orange Orchards, Walnut Orchards, and Town Property. Tell us your wants.

Orange County Nursery and Land Co. **Fullerton, Cal.**

100,000 Berry Plants

NOW READY

Burbank's Phenomenals
Red Logans
Mammoth Blackberry
and Other Varieties

Catalogue Now Ready

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17 to 23 Kennan St. **Santa Cruz, Cal.**

Grafted Walnut Trees

Placentia Perfection

1000 First-Class Trees, 10 to 13 Feet High

These trees were raised for our own use and are the surplus over our requirements. Growers who have both grafted trees of this variety and common seedlings, say they would pay $5.00 per tree for Placentia Perfection Grafts, rather than plant seedlings. They bear earlier, the nuts are less subject to blight, and sell at a big premium, being unquestionably the most ***perfect nuts on earth.*** Address

Leffingwell Rancho, Inc., Whittier, Cal.

WALNUT TREES

grown from carefully selected seed

I have a fine lot of trees. Call and see them. Postal gets price list. **A. A. MILLS, Anaheim, Cal.**

WITH A SIEVERT OIL BURNER

You can burn 100,000 cubic feet of air with every 130 gallons of oil; this means perfect combustion. To burn more than 100,000 cubic feet of air with 130 gallons of oil, there is a decided loss of heat. To burn less than 100,000 cubic feet of air there is a loss of fuel.
The only safe and reliable burner on the market.
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SIEVERT OIL BURNER CO. 1001 No. Alameda St., Cor. Main and Ord Sts., Los Angeles, Cal.

Deciduous Fruit Culture

By J. W. MILLS

SPRAY FOR FUNGUS DISEASES.

IT IS safe to spray for fungous diseases any time from now till the buds begin to open when the lime, sulphur and salt remedy is used, even till the color of the flowers show. This is true only of varieties of fruit which leaf out after blossoming. Blackberries, for instance, cannot be sprayed with this wash just before blooming as they are then in full leaf and the wash is fatal to foliage. Bordeaux mixture may be used any time and not injure the foliage.

This mixture is often used to advantage in midsummer. The ideal time to use fungicidal washes is just before the buds open, but it is not practical because a long continued rainy spell, which is liable to occur at that time, would delay the work till the fungus spores grow, and in many diseases, curl leaf of the peach, for instance, the damage is beyond repair. When the spores sprout, they send out a thread-like growth called mycelium which penetrates the tissues of plants just as plant roots do the earth. When they once enter the plant tissue, no spray or wash will reach them. They grow and multiply even after the exposed part is killed.

The point to keep in mind is to kill the spores before they sprout. The sprays recommended for this purpose will kill the spores whenever it comes in contact with them. Late spraying is theoretically the best, because it leaves less time in which a new lot of spores may "blow in" and reseed the plants. However, as stated, it is best not to lose any time in spraying now, as rains may delay the work till too late to do much good.

STARTING A PEACH ORCHARD.

You will probably expect me to tell you how to prepare the land and the distance apart to set the trees, etc., after advising you to get the best stock from a reliable nursery, but such is not my intention. In fact, I will depart from the beaten path and outline a method that may bring down upon my head a storm of protest from the wiseacres. I am not opposed to the budded varieties, but the plan I shall follow combines the advantages of both the budded and seedling. It is a fact beyond dispute that seedling trees will bear three crops while the budded tree bears one, and it is also well known that the seedling will live longer. But look at the other side of the question, and we see that while the seedlings have borne the crops they are in many instances utterly worthless. However, it is a well-known fact that the best varieties are without exception a chance seedling, and that were it not or the seedling we would get no new varieties.

It is not generally known how easy it is to bud and graft, and the process is supposed by many to be some magic gift. Any one with ordinary intelligence may, with a little practice, become proficient in the art of grafting and budding. My plan is to plant the seed where you want the tree to stand, and allow it to become of bearing age before it is budded; then, if it is not desirable, it may be budded to some other variety.

In the first place, we know that the matter of locality has a great deal to do with seeds of all kinds, and I should endeavor to get seed from a near-by orchard if practicable. Many varieties of peach are nearly true to the parent tree, notably the Indian peach, and it is well to select seed from good varieties, although in some instances the best fruit comes from trees grown from seed that have been taken from very ordinary trees.

It is the usual plan to bud peach trees rather than graft, as is done with the apple. Budding may be done either in the spring or fall, or even in the winter. In budding these seedling trees, saw off the limbs near the tree and insert the buds, one or more in each stump. There are many ways of budding, but probably the best is to select buds from a twig of the current year's growth. Insert a sharp knife half an inch below the bud, cutting up as far above it; this will remove the bud intact with a small piece of bark, which should be inserted in the stock as follows: Make a horizontal cut in the stock, or stump, near the top, then another at right angles to the first, barely cutting through the bark where the cuts cross; insert the bud and push it down as far as necessary to hide the bark, leaving the bud projecting through the slit in the bark. Pull the bark down snug and wrap with soft strings. After the bud is set remove the wrapping. The method of winter budding which I give I consider more desirable in that it can be practiced when the bark will not slip, in winter or fall. Limbs three inches in diameter may be successfully budded. In treating large trees, cut away all the limbs to within four or five feet of the ground and select three or more to receive the buds. Insert the knife into the bark of the limb just as if a bud was to be removed, and draw it downward about an inch, pressing the cut back a little to keep it open; cut the bud from the scion as for ordinary budding and lay it on the cut surface, after which place the flap back and tie it firmly, the bud thus being completely covered. As an additional precaution, I would suggest that a piece of waxed cloth be laid over the flap before tying. Where buds do not stick in the summer, they may again be tried in the winter by this method. Not one in a hundred will fail, and I have known six-year-old peach trees thus top-budded in March to bear a good crop the succeeding season.

In starting an orchard in this way, you will be only one year later than if year-old trees were set from the nursery, and you have the satisfaction of knowing that when you once get a desirable variety it will endure for a good many years, and will be a source of much greater profit than any budded tree. Even the seedlings that are top-worked will have the advantage of the good root system and will have all the vitality of a seedling. If desired, the young trees could all be budded before they came into bearing, but this would defeat the main object sought, the only advantage being that they would not have to be transplanted. A variety that would prove a boon to the peach growers may be dis covered in this way, but the chief advantage of this system lies in the fact that a man may leave posterity an orchard that will endure and one that will produce crops every year.—[Journal of Agriculture.

Little courtesies are the wayside flowers of life.

LIME SULPHUR SPRAY.

The Piper formula, or 1:1:4 wash, is prepared by using one pound of lime for every pound of sulphur. First take the lime in the cooking vat. Then add the sulphur and enough more water so that the mixture will stir easily. Stir the mixture constantly while it is coming to a boil, and continue brisk boiling for one hour. When the boiling is completed dilute with water until there is one pound of sulphur to every four gallons of spray. The diluting may be done with cold water, in or out of the spray tank or in any manner convenient to the operator. The solution should be strained as it is run into the spray tank. This formula requires no salt. The old, or California formula, using salt, is well known to those who have prepared it in the past, and so it is unnecessary to discuss its preparation here. The old formula has given perfect satisfaction and so there is no risk in continuing its use. The new formula has not been used here, but there seems to be no reasonable doubt that it should succeed as well in this locality as it has elsewhere. The advantages of the new formula are that it is easier to prepare, cheaper and less difficult to apply.

Instead of preparing this spray the farmer may purchase it in concentrated form, as there are several commercial brands now on the market.

It should be remembered that the purchaser of a proprietary article is usually taking some risk; that the material may not be up to guarantee; and, further, it may prove more expensive than the home-made compound.

FRUIT INSURANCE.

E. P. Sandsten in Bulletin No. 110 of Wisconsin station, says, "Spraying is an insurance and every fruit grower should be a policy holder." That sentence covers the ground completely. Many farmers do not realize why they get so small returns from their fruit trees. They buy trees, set them out and give them no more care than they do the willow storm hedge.

The trees must fight weeds, rabbits, mice, climate, fungus and insect enemies all alone. Then the farmer wonders why the trees die, or fail to give good fruit. They get disgusted, curse the nurserymen, say there is no money in fruit, and let the orchard go, to be a breeding place for the diseases and enemies of other orchards.

There is no sense in such an attitude. The farmer who neglects his stock or his grain crops as he neglects his orchard will have as complete a failure with them. The man who says all breeders are dishonest is one who does not take proper care of the full-blood that he buys. He, himself, is at fault. The man who will raise fruit trees and neglect their sanitary conditions is as much a curse to the fruit growing section as he who has no regard for the sanitary conditions of his live stock.

But the law makes a man burn or bury his dead hogs and prevents him from selling diseased stock. This is true in some States regarding fruit trees, but not in all. Too few realize that trees need sanitary care. They will dip sheep and hogs, but neglect spraying fruit trees. They will have a veterinarian operate on diseased horses and cattle, but they leave diseased and dead branches on the trees to do further damage.

Fruit insurance consists in proper cultivation and care of the trees, and spraying at the right time with the right chemicals for a specific purpose.

WINTER SPRAYING.

The object of winter spraying in this section is twofold. First, the control of various scale insects, chiefly the San José scale. Second, the improvement of the condition of the tree by the removal of moss and other growths. A number of sprays have been recommended for this purpose, but it is the opinion of almost every expert on the subject that the lime sulphur spray, more commonly known as lime, salt and sulphur, answers all requirements best. The properties of this spray are well known, and may be briefly stated. It is a fungicide, it is an insecticide, it removes mossy growths, it improves the general condition of the tree.

All of these properties are not possessed by any other known spray, which properties recent investigations of the Washington experiment station have shown to be due to lime and sulphur in solution. The solution is formed by boiling the two ingredients together in water.

Sorting Olives

HEAVY FRUIT PLANTING.

From the quantity of nursery stock now being imported into our state it is probable that there will be a larger addition made to the deciduous fruit area this season than ever before in one year. Reports are that trees by the car load are arriving in nearly every county, and this in addition to all that are supplied by our local nurseries. It is evident that popular faith in fruit growing as a profitable industry, in spite of the difficulties which accompany it, is not abating.

The national forest preserves now aggregate almost 100,000,000 acres, acquired within two or three years.

An Edge Test

Perhaps your knife, when newly sharpened, will cut paper, but whittle hard wood for a few minutes—then try it. If you want a Knife, a Saw, a Chisel, a Plane, a Drawing-knife, or any edged tool that will hold its keenness through long, hard service ask for the kind marked

KEEN KUTTER

This trademark covers a complete line not only of edged tools, but tools of all kinds. Saws, Hammers, Screwdrivers, Files, Pliers, Glass-cutters, Ice-picks, also Garden and Farm tools, such as Forks, Rakes, Hoes, Shovels, Scythes, Manure-hooks, Grass-shears.

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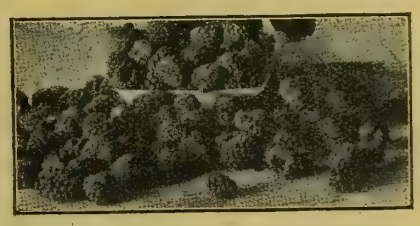

The most up-to-date berry on the market. They will clear you more money to the acre than any other berry you can grow. $750 clear profit has been made from one acre of these berries. The market price has been from 75c to $1.50 per crate of 16 half-pound baskets. I have taken ripe berries from my vines by the first of May.

Young Plants—I have for sale this year plants that I will guarantee will grow you large and healthy vines. **Prices**—I can furnish large orders on short notice. Price per dozen $1.00, per hundred $7.50. My plants are rooted from the tips, and will make you a strong and fast-growing vine. Order at once to ensure delivery.

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Poultry and Berry Farm
Palmetto Av., Sacramento, Cal.

To get actual size of the "Phenomenal" measure 2 inches lengthwise and 1 inch in width, then draw a circle around the points.

Don't Overlook Newbert's Winning Strain of S. C. Wh. Leghorns

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Nursery
1 Mile North of San Dimas

Finest Valencia Trees we ever raised. Can't be beat. A few Navalencias and Nectar Pomelos (Grape fruit). The Nectar Pomelo is the finest in California.

O. M. BURT, at Nursery.
A. P. GRIFFITH, Azusa, Cal.

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Growing Eucalyptus Trees. We can supply the following varieties in quantity:

E. Globulus
E. Rostrata
E. Rudis
E. Corynocalyx
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Our New Illustrated and Descriptive Catalog for 1907 sent to any address for a two-cent stamp.

Armstrong Nurseries
Box 114, Ontario, Cal.

Shade Trees

OUR SPECIALTY
A fine assortment and large quantity of Acacias and Eucalyptus.

EUCALYPTUS—
Globulus, Rostrata, Corynocalyx, Rudis, Viminalis, Tereticornis, and other kinds

ACACIAS—
Melanoxylon, Baileyana, Floribunda, Cultriformis, and a dozen others.

Other Shade Trees and Ornamentals for the small planter or the large buyer.
Write us your wants.

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Saint & Warner, 4584 Pasadena Ave, Los Angeles

Grape Vines **Apple Trees**

50,000 Rooted Muscat, Sultana, Tokay, Concord
10,000 W. W. Pearmain, Winter Banana and Assorted.
Deciduous, Shade and Ornamental Trees, Elm, Maple, Umbrella, etc. Old-fashioned Flowering Shrubs, Weigelia, Lilac, Snowball, etc. Write for prices.

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GRAPES

Come into bearing the second year after planting. Why plant fruit trees and wait four years. Our vines are Pedigreed Stock, true to name, healthy, thrifty and graded.

Money Makers:

Red Emperor — True Spanish Malaga
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Write Us for Special Prices on These Varieties

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Trees

Early Crawford, Hale's Early and many other varieties of Peach trees; all fine budded stock.

Large stock of all the leading varieties of Apples, grafted on whole roots and free from all pests. Also a fine stock of Cherries, Pears, Burbank and S.B.S.S. Walnuts, etc. Send for price list.

A. F. Scheidecker, Sebastopol, Cal.
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Records and Supplies, delivered at your nearest railroad station upon receipt of full retail price. Write for particulars and ask for catalogue.
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Orange Orchards

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Located in the Best Citrus Fruit Belt in California

$125.00 per Acre

to secure a 10-acre orchard that will pay later on from $800.00 to $1000.00 net profit per year per acre.

Let us tell you how this can be done.

Absolute Security

for your investment and for large profits, is GUARANTEED in this the BEST ORANGE ORCHARD PROPOSITION ever offered. Your profits GUARANTEED by BOND and MORTGAGE on OTHER ORCHARDS of our own.

Only 200 acres will be sold in this way to advertise the tract of 3000 acres we are selling.

Frostless location, ABUNDANCE of cheap water, BEST CLIMATE AND SOIL in the whole State FOR ORANGES AND LEMONS.

Orchards 10 to 20 years old and clearing up to

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in this locality are proof positive of the value of our proposition.

Such an Opportunity

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Show You.

We have the best proposition in the world for good, successful, responsible agents, who can SELL REAL ESTATE either on large salary or commission, or both, and we want the best representative obtainable in every city.

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With the Citrus Growers

By J. W. MILLS

SOLVING PROBLEMS.

SIX YEARS or more ago there was warning given about the damage done oranges by pickers, teamsters and graders; faults were found in all the different departments of the industry. Attention was called to all the weak points of the business, but very few efficient preventives were employed. An old staff writer, Mr. James Boyd, wrote columns on the subject, under the different heads of "Careful Handling of Fruit in the Orchard," "Teamsters," "In the Packing-house," "Labor" and all the different phases.

Why was it that no particular progress was made in careful handling. It seems to have been because the hands did not know how. They thought they were careful, but being ignorant of the nature of the injuries, they could not know how to guard against them. It required some person who could properly analyze the proposition and classify the different kinds of injuries, determine exactly what movement of the operation produced them and demonstrate how to avoid making them.

Every Southern California orange grower knows that Mr. Powell did this, but the lessons taught by him will not end with his orange investigations. He has made it easier for growers to look into and analyze their various problems as they arise. They have been shown how simple it is when once started aright, and a little thinking when started right makes all the difference between success and failure.

BLACK SCALE PARASITES.

Some one or many parasites combined which might render artificial attempt at extermination of the black scale unnecessary, is a blessing that the orange growers have been praying for, for a long time and Mr. J. W. Jeffries in his able paper before the recent Citrus Institute at Riverside touched on this subject, and told of the unsatisfactory results, in most places, derived from the Scutellista, which promised such quick relief. He also told of the black scale parasite recently introduced at San Diego from China, and while he was hopeful of good results he warned citrus growers not to count on it till they had demonstrated to a certainty that they could keep the scale down to numbers where they can do no harm. Ever then we cannot hope to do away with washing, at least. It is a well recognized law that these insects never can be totally exterminated, as it is impossible for the parasites to clean them out of all places at the same time, and as the supply of the parasite increases, and diminishes there must be a supply of food for them. An approximate extermination of the scale means the same for the parasite.

Some years ago, a fungus appeared that was found beneath every black scale on some trees in certain localities and it was thought that a natural exterminator for this scale had at last arrived. It was a very wet season that this fungus appeared and the scale was completely eradicated from an olive orchard under our observation.

The fact that it was during a wet season prevented us from throwing up our hats and shouting. The next season brought scale and no fungus, and so it continued till last season when it appeared on scale in all trees with dense foliage. On trees which were open and dried out as soon as the sun came out, no fungus appeared. As 90 per cent. of the scale on the fungus infested trees was dead by Scutellista before the fungus appeared, it would seem that dead scale might have been the chief, if not the whole attraction for it.

In 1898, about the time we observed this parasite, Dr. S. M. Woodbridge experimented with this fungus by making clean cultures of it on bread. This was distributed by him with varying results. Further effort in this work soon died out as unfavorable climate conditions completely destroyed the fungus growth. One or two short periods of unfavorable weather will check it so that it is rendered useless for the season.

COMMERCIAL FERTILIZERS.

Does it pay to use commercial fertilizers? Nothing is easier than to make this trial for yourself. Experiment upon a small portion of your crop, sufficiently small to occasion no inconvenience in the event of failure, but large enough to enable you to judge of its effects. Treat this experimental portion as rec ommended in the following notes. A few dollars will cover the cost of such an experiment, and the results will enable you to contrast the action of the fertilizer even more satisfactorily than if the whole had been manured. If the crop responds to this treatment, you will be justified in looking forward with confidence to a similar benefit on treating the whole of the succeeding crop in the same manner.

There is absolutely no doubt that a rational system of fertilizing combined with proper cultivation, will enable the farmer to improve his crops, in spite of the fact that the soils may apparently produce an abundant crop, but the fertilizing must be done scientifically that is, rationally.

FERTILIZER TESTS.

It is evident that in order to ascertain whether the use of fertilizers really pays, a practical field test must be made. This is done by setting apart a small patch of a certain field, solely for this purpose. This patch must be divided into a number of squares of exactly the same size, designated by small pegs, driven into the ground indicating the various squares. The whole patch must be treated exactly alike in the way of ploughing, cultivating, etc.

By treating some squares with fertilizers and others not, the contrast will soon be apparent, subsequent comparison of the yield will show exactly to what extent the crop has been increased. Figuring the extra yield over and above that from the unfertilized squares at market prices, and deducting from this the cost of the fertilizer, will give you an exact idea of the benefit derived from the use of fertilizers.

CROP REQUIREMENTS.

In connection with rational fertilizing we have to consider the following points:

1. What are the chemical requirements of the different crops?
2. In how far does the soil meet these requirements?
3. In what direction are they to be assisted by fertilizers?

Concrete was recently successfully used in patching a great hole in a ship's bottom.

CITRUS FUNGOUS DISEASES.

In animal so in vegetable life; a vigorous well-fed individual withstands disease while the weak, starved one succumbs. The pomelo is naturally a vigorous grower and we are probably not far astray, when we say that compared with sweet orange trees of equal size and age they require from one-fourth to one-third more fertilizer. In a number of instances poorly fed trees have been attacked on leaf, branch and fruit by the disease, while better nourished ones immediately adjoining showed no signs of its attack.

The remedy in this case is obvious. Where trees have been badly whipped by the wind, causing abrasions on the fruit and branches and tearing the leaves, the disease adds to the injury already done. The wounded spots are very readily attacked. On the other hand trees standing in still areas, where is little or no air movement are more subject to attack than are those about which the air circulates freely. The trees should not be subjected to the whipping force of the wind, neither should they be so hedged in or walled about by standing timber as to prevent a free circulation of air. In the matter of forest protection the middle course should be pursued.

The disease usually follows injury to the leaves, branches and fruit by frost. The spores of the fungus gain access to the tissues through the part injured.

Trees suffering from Die-back, Foot-rot, or any other disease are more subject to the attacks of Anthracnose than are those which are entirely healthy.

These devitalize the trees and puncture the tissues thus making it possible for the fungus to gain a foothold. Among those insects which appear to assist in increasing the attacks of the fungus may be mentioned the different scales and mites in particular. Spots upon citrus leaves immediately beneath clusters of long or purple scales are generally found to be diseased and it is probably not too much to say that insects open up the way for the fungus to enter leaf, branch or fruit.—[Florida Bulletin.

PLANT EXPERT RESIGNS.

Herbert J. Webber of the bureau of plant industry, has resigned from the government service to accept a professorship at Cornell University. Dr. Webber has been in charge of the plant breeding experiments of the Agricultural Department. He entered the government service in 1892.

He has produced new varieties of long staple, upland cotton, regarded as a valuable contribution to scientific agriculture. He also has developed a hardy orange capable of withstanding a severe frost. When this result was obtained, however, instead of being a hardy orange, it was found to be a composite fruit with the combined characteristics of the orange, the lemon and the tangerine.

Dr. Webber will not take up his duties at Cornell until next spring, when he will take charge of a now department of the university, to be known as the department of experimental plant biology.

An Improved Farm Level.

An improvement in farm levels which gives promise of usefulness in irrigation and drainage work, is announced in this issue of the Cultivator. The claims made are for simplicity and ease of operation. It is called Bostrom's Improved Farm Level, and is sold by the Palace Hardware Company, 456 Golden Gate Ave., San Francisco.

When writing advertisers mention Cultivator

RED AND PURPLE SCALE.

A few Covina orange growers have demonstrated to their satisfaction, that the purple and red scale can be killed by gasing with cyanide and not injure the trees in the least. The usual strength was increased till it was advanced to three times that amount, but the gas was generated slower and tents left on for a greater length of time. It looks some time to get the proper adjustment but they now claim that they can kill these scales and not injure the trees. Mr. S. A. Pease of San Bernardino, has made the same claim. This is, however, very expensive and when it comes to covering large trees, they must give good returns to warrant such treatment.

The Stover Gas Engine Again.

About a year ago mention was made in these columns of the rapid strides made by Livingston & Lee in introducing the Stover Gas Engine into this field.

Since that time the expectations of that firm have been more than realized. They not only succeded in selling several carloads of these engines in face of strong competition but they are also able to report that every engine they have installed has been a grand success.

They pride themselves on the fact that they have been able to overcome the car shortage difficulty and freight blockades and now have a full carload on the floor which has made remarkable time from the factory, so that they are in a position to supply customers with anything from two to forty horse power at once.

Taking the hint from remarks made by their competitors, this firm has taken the precaution to lay in a large stock of extra parts for all size engines and now have these parts on exhibition. This, together with the fact that Livingston & Lee are connected with the shops of the Commercial Engine Company, puts this firm in a position to meet all demands that may be made for extra parts for Stover Gas Engines.

They are looking forward with pleasure to the yearly visit of Mr. J. F. Smith, Secretary of The Stover Engine Works, which is expected in the first week of Feburary. These visits by the Stover representative are without doubt a great benefit to both agent and consumer, as it puts the factory in a position to understand the needs of the different localities.

The Stover people report that they have been making tests with alcohol for fuel in their engines with great success and have ready an attachment by which any of their engines can burn alcohol with small expense to consumer for the change. In other words they are keeping up with the procession.

The main features of the Stover are its simplicity of design, and its great strength both as to general construction and in actual horse power developed. The speeding device mentioned before in these columns has proved very successful and a number of well-boring outfits in and around Santa Ana are using Stover Engines for power on this account.

On the whole Livingston & Lee have cause to be well pleased with their year's work, and any one interested in gas engines will find their sales room at No. 953 North Main street, well worthy of a visit.

We are sometimes apt to think our Canadian cousins are rather slow, and perhaps they are, but facts show that many of ourselves are taking notice of things across "the line." In 1896 official records showed that 49 Americans went into the north-west of Canada to settle, but in 1905 it was stated: "The bone and sinew of the Mississippi Valley have been moving into Western Canada for the past four year to find farms and fortunes." We fancy often that Alberta Province like the extreme north is a region of icebergs and polar bear, but when we learn that the sugar beet factory at Raymond turned out two million lbs. of sugar last year our pre-conceived ideas are somewhat staggered.

Waggs—I hear old Miserly has untold wealth?

Jaggs—Who told you?

Waggs—The tax collector.

The Venus of Milo explained: "I twisted 'em off trying to fasten the three middle buttons in the back," she announced. From this it was easily inferred that she had no husband.—

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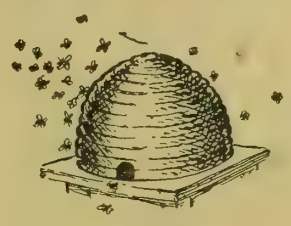

Growers of Trees BEFORE BUYING Orange or Lemon Trees

SEE MINE, OR WRITE ME ABOUT YOUR CITRUS NEEDS. IT WILL PAY YOU.

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ALL ABOUT THE
Orange and Lemon

Is told in our new book on Citrus Culture, embracing every phase of the subject from the seedling bud to the final disposition of the fruit in the Eastern market. The largest and best book on the subject ever printed — 50,000 words, 100 illustrations. You will want a copy, which we will send you for the small sum of 25 cents. Remember we are the largest growers of orange and lemon trees in the world.

The San Dimas Citrus Nurseries
R. M. Teague, Prop., San Dimas, Cal.

THE "BOSS"
TREE PROTECTOR
Made of Yucca Palm

Is cheap, durable and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn, grasshoppers or dry winds. Can be easily removed; will last for years.

Send for samples.

PRICES

12 inch long, $ 9.00 per 1000
14 inch long, 10.00 per 1000
16 inch long, 11.50 per 1000
18 inch long, 12.50 per 1000
24 inch long, 15.00 per 1000
30 inch long, 17.00 per 1000

Agents Wanted Everywhere

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2124 Willow Street Los Angeles, Cal.

Whale Oil Soap

Barrels, Half Barrels, and in Kegs.

C. C. C. Anti-Carbolic Tree Spray

This spray is ready for use by simply adding cold water. It assimilates perfectly and forms no sediment. Makes the trees clean and healthy. More effective, and cheaper than lime, sulphur and salt, or caustic soda.

Whale Oil, Fish Oil, Crude Carbolic Acid, Red Arsenic

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California Compounding Co., Inc.
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20,000 Citrus Trees 20,000

Washington and Thomson's Improved Navels and Valencias Seedless Grape Fruit

One and Two-year Buds, Clean, Healthy, Vigorous Stock.
Better Secure Your Stock At Once, as the Supply Is Short.

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GREAT LAND OPENING IN CALIFORNIA

We are opening the Western side of the Sacramento Valley under irrigation for the first time. PRESIDENT ROOSEVELT has signed a Special Act of Congress granting our great Central Canal 45,000 miner's inches of water from the navigable Sacramento river, enough to irrigate 200,000 acres. Rich, black sediment soil; free water right, best in U. S.; climate unexcelled; all fruits and vegetables grow to perfection; rail and steamboat transportation to ready markets. 10, 20, and 40 acre tracts from $30 to $100 per acre—terms, one-sixth cash, the balance in five years. Excursion rates from all Eastern points after March 1st. Rates from Los Angeles now in effect. For information and literature write or call on F. E. ROBINSON & CO., 216 Pacific Electric Building, Los Angeles, Cal.

When writing advertisers, mention Cultivator.

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Write us for prices on the **Buhl** sanitary **"Glass Finish"** Milk Cans, all sizes. We have the largest stock on the Coast and our prices are the lowest.

See Our Cream Separators

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The Difference
Comes Out of YOUR Pocket

A common kind of "Bucket Bowl." Heavy, hard to wash, easy to rust.

SHARPLES Dairy Tubular Bowl. Simple, light, durable, easy to wash.

If you don't **know** that Sharples Dairy Tubular Cream Separators are **different,** take no chances until you find out. "Bucket bowl" agents depend on catching the fellows who **don't** know. Don't let them take the difference out of **your** pocket. One difference is in the bowl.

Shake The Insides Out!

Before you buy a separator shake the insides out of the bowl. It will show you how heavy, complicated, hard to wash, easy to injure, quick to rust, "bucket bowls" are as compared to Dairy Tubular bowls. **Sharples Dairy Tubulars are different.** Nothing inside Dairy Tubular bowls but a small dividing wall of triple tinned pressed steel—no bigger than a napkin ring—good for a lifetime. Yet Tubulars have twice the skimming force of any other separator—skim at least twice as clean.

You have common sense—want to save your wife work—want to save yourself repairs and cream—so why not learn about this now? Our free catalog N-260 shows many other exclusive Tubular advantages of great importance to you. Also ask for free book, "Business Dairying," covering everything from calves to butter.

THE SHARPLES SEPARATOR CO.,
Toronto, Canada West Chester, Pa. Chicago, Ill.

For Sale
Sargent Fox, 64833 A.J.C.C.

Bred in Jersey Son of Flying Fox

Heifers by this Bull are now coming fresh, and prove him to be a valuable sire. His get are better producers than their dams, and are greatly improved in type. As our herd has been practically closed out, this bull is for sale.

Leffingwell Rancho, Whittier, Cal.

Cook With Gas and Save Money

Make Your Own Gas and Save More Money

This Machine will do it for you and give you better gas than any gas company will sell you. Write for our catalog. Agents wanted in every town in California.

Speer Gas Machine Mfg. Co.
922 Santa Monica Ave., Los Angeles, Cal.

Orange County Lands Five, Ten and One Hundred Acre Tracts Improved and Unimproved Land with lots of Water. ***Price $100 per Acre and Up.*** Terms, One-Fifth Cash, balance in one, two, three and four years.

Jacob Stern, 404 Pacific Electric Bldg., Los Angeles

Live Stock and Dairy

By Mrs. Minna E. Sherman, Fresno, Cal.

THE HORSE.

MY table contains two requests that I shall write on the horse as we raise and care for him on the ranch. While I try to avoid personal topics as a rule, still as I have had the request I will for this once comply.

Horses are money in these days, big money! I hope many of the farmers have grade drafters for sale. I fear not, for they have not been breeding them, thinking the auto trucks would take the place of the horse in the larger cities. In the disaster that overwhelmed San Francisco, the auto truck has proved not as good as the horse and wagon on the broken up steets. Nearly three hundred horses a month have been the death roll in San Francisco during the past months. These have been able bodied, not decrepit, worn out horses; the replacement will hold the market up for sometime.

It is a pitiful sight to see the horses straining to draw heavy loads of bricks over the broken up streets in San Francisco, as pitiful as the towering ruins of the familiar buildings. The fact that the work in reconstruction is being done by individual contractors, instead of by a general municipal organization adds to the expense, had the work been under one head, the dreadful mortality of horses could have been saved. A sound work horse today of 1700 pound weight, sells readily for $250 and upwards, without even having the cockle burrs cleaned out of his tail. Fancy match draft teams of 1900 weight, sell readily at $800 to a $1000. Driving horses of 1000 to 1300 pounds weight sell at $175 to $500 each, while ponies under 800 pounds that two years ago sold for $40 each, now bring upwards of $100.

Young mules are even higher than drafters, if they have size and are well broken. It seems to be the time for the farmer to breed his mares to a good draft stallion. The expense of raising a colt to the age of three years old here on the ranch, including the feed of the mare during the time she is off duty is $36.00; add twenty for stallion fee, and the expense comes to $56.00 when ready to do a full days work.

Age for Work.

At two and half year's old the draft colt is ready to do half a days work. He can be halter broken and put into harness within two weeks. As he is then docile, and easily handled, any one with patience can drive him from the first day he is hooked up. Put him in with a gentle horse that pulls steadily at slow work, the plow being the best. It is an error to put the draft colt on the road. He jars his shoulders and soft muscles, even his joints are soft and the body fat is not yet as hardened into good muscular condition. Like Hamlet, he is fat and scant of breath, so do not force him to move fast, let his head be checked low, and see that the harness fits him well, particularly the collar. Now remember he is only a great big baby, use him gently, pat him along, and if he wishes to stop to catch his breath before reaching the end of the plow row let him. Many a good draft horse is soured by rushing him as a colt; if he grows sour he will later become a balky horse, but in the Percheron this is not a characteristic fault. In the hundred we have raised, from pure breed to the scrubbiest sorts of mixed blood dams, we have never had a balky one,—only two that were kickers. These kicked like a cow with one hind leg at a time.

The shoulders of a colt have to be watched at first, for it will not do to allow them to become sore. When the collar is taken off have it wiped off carefully, then wipe the horses' shoulders, and with the palm of the hand rub the flesh gently until the circulation is restored. During the first three months it is well to work the colt only half days, then if he has held his own in flesh, he can be given a full days work. When the colt loses flesh, he is worked too hard, and even the half day may prove too much for him, and he should be worked only alternate half days, to fit his strength. It is important that he is not worked down. for it will stunt his growth sadly if he has a set-back at this age.

Owning a Stallion.

The farmer at this time sees the opportunity to make money if he owned a stallion. The eastern horse companies also see an opportunity to unload a lot of stallions. The confidence game is played not by selling a crippled or diseased horse, but by making the farmers pay more than he is worth. A man comes to town with four or five beauties of stallions, he talks of them and enthuses the farmers into forming a club; they pay part cash, and give individual notes for the balance. Now, I was told by a man selling me a horse last year that he had sold directly to purchaser and also by companies. I asked him why he took the two forms of doing business. He said that they exploited a neighborhood, and wherever they found no one owning stallions, they sent a man to form companies. They got nearly double the money from company or club that they could from an individual for the same horse. That is, a fifteen hundred dollar horse, could be floated as a company or club horse for three thousand dollars, that men buying in a bunch each felt his share in the horse was not costing much, and it did not matter as much as though it were a one man bargain. Then also a good salesman could make believe they had the cream of horse flesh in their stallion.

I believe this to be true for I have seen a numbr of company horses around the State and when told what they cost have marvelled, why I could buy for so much less than that horses as good and with as good a pedigree. Eighteen hundred dollars to $2000 will buy extra good stylish draft stallions, while unsound stylish one can be boubght for $800.

The farmer with less than fifteen mares, had better try to make special yearly prices with the best horse in his neighborhood, rather than own his stallion. It is usually very unsatisfactory to own an interest in a horse, for a little carelessness and the horse dies of pneumonia, or some other disease.

We have usually about a hundred head of broken horses on the ranch, and thirty weanlings and sucklings. The geldings are sold off as soon as

See Us for Sanitary Milk Bottles. O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

well trained, the grade draft mares are sold when they have given us three or four colt,. usually at seven years old. The pure bred registered dams are kept to raise stallions for the market. When a common mare proves to be an exceptionally fine breeder she is retained longer, but the idea has been to bring the stock of grades up in weight to the full-blood standard, and each generation was one more cross with the heavy blood.

The carriage horse stallions have been of our own raising and we have done well with them in getting sound, handsome, kindly colts, with a good amount of speed. It is foolish to breed to a mean stallion, the man that keeps stallions shouuld see that they live a normal life. The draft stallion should work in a wagon at draft work on the road and fa m. Our carriage stallion is driven by the wise man to his buggy, or to the phaeton. I feel safe to drive him to town at any time. Kindly stock can not be sired by crazy-header stallions, the level hearedness is inherited from dam and sire alike.

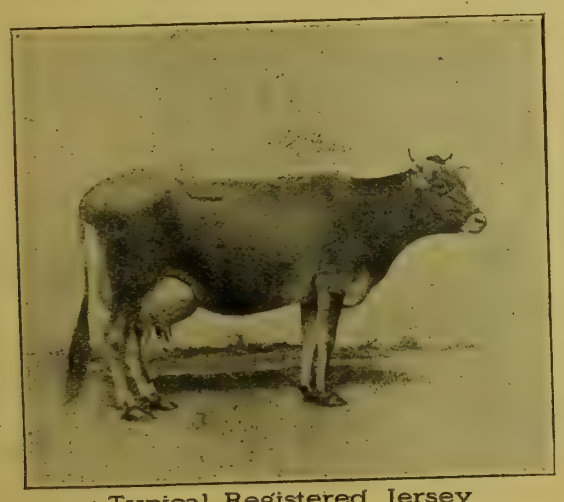
MISTAKES IN DAIRYING.

In an interesting paper on why dairying frequently does not pay, Wilber J. Fraser, chief in dairy husbandry, Illinois University, gives the following suggestions in the Jersey Bulletin.

Americans don't take to the idea of chains and slavery, but many an Illinois dairyman has unconsciously drifted into the condition of the man in the picture shown with this article. He is not chained to a fellow prisoner or to a post, but to a common (altogether too common) brute—to a worthless, willful cow.

He don't know where he is going; he simply follows the cow. That's how he got tied up to this creature; he didn't know what he was doing, nor what the cow was doing—or rather what she wasn't doing. In fact, there's been altogether too little looking and doing in this man's business.

The dairyman has blindly followed without figuring; he has worked hard with his hands, but little with his lead pencil, and the dollars have come his way very reluctantly. And as for the cow, the only thing she has done right well is—the dairyman; she is "doing" him beautifully. If the dairyman ever gets hold of that big key there'll be "something doing" in that dairy! He will soon hand over his end of the chain to the butcher.



Typical Registered Jersey

The Cow is not Worried.

She is not disposed to look on the dark side of life as long as she can go where she pleases and get a living without earning it. Thus far she has found no trouble in pulling her owner along without his asking any questions, and she now feels sure that her milk record will never be inquired into. She doesn't know about the key within his reach.

That chain had never galled her shoulder, but she has plenty of gall for all that. She has been satisfied to make 133 pounds of butter fat in a year and to return to her owner a clear profit of 77 cents in those 365 days. If the dairyman had 474 cows of this kind he could make from them just one dollar a day! With that he could keep body and soul together.

Not A Rare Specimen.

But do not mistake this cow for a rare specimen of an almost extinct family. On the contrary, she is very common and popular on all our prairies. She is a cow of consequence and not to be sneezed at and dismissed from mind. She is in fact, a leader; she leads that dairyman (and a great many others) where she will, while she grazes contentedly.

She also has a following of one-fourth the million cows in Illinois—250,000 of them have learned bold assurance in using the dairyman's feed and barn and time and capital for a cent-and-a-half a week per head. This cow is right now doing a great stroke of business in Illinois dairying. The only stroke that can ever get ahead of her is the stroke of the butcher's mallet on her head.

It may be said to the credit of this cow that she is not a vicious animal. The dairyman has nothing to fear from her horns or her feet. She is a well-be-haved creature, familiar to every farmer, and usually there is nothing suspicious about her manner.

But when it comes to remorseless stealing of the bread from the mouths of the dairyman's family, her tribe may well be classed with the great business sharks. She has kept the dairyman of this State out of fully five millions of dollars the past year without the slightest shame or nervousness. And yet the dairyman follows this cow as though he had never known freedom from such an encumbrance. The dairyman who says that

Dairying Don't Pay

Is ten to one boarding several cows of that kind in his herd.

The dairyman is not exactly easy in his mind. That chain is heavy and tight, but he has carried it so long he thinks that burdens belong with dairying, or he lays the blame to ill luck or a poor price for milk; or perchance he says he can not afford to keep good cows, forgetting that he could less afford to keep poor or worthless ones.

But see, the hands of science and the most successful dairy experience have provided him a key to the situation. As soon as ever he sees it—O, that he might see!—he will make use of the scales and Babcock test and find out what every cow on the place is doing for him—or against him. Armed with that knowledge, faithfully furnished by the dairy and agricultural press, he will never follow that pious old fraud of a spendthrift cow again.

The cow for this dairyman stands behind him. She has learned the knack of turning feed into milk and butter fat. She represents the average production of the best fourth of the dairy cows in Illinois (300 pounds of butter fat per year,) and the dairyman should get acquainted with her. She is a better cow than he thought.

In fact, he has not thought enough about this cow or known how many such are in his herd. He can not know

Without using the Key—

Weighing and testing the milk of each cow for the year. He would have a vastly easier time of it if he were tied to this cow, and to this cow alone.

And as sure as he uses the scale and test and comes to know each cow's production, he, like all other dairymen who have tried it, will gradually change his herd to this kind of high producers. And that will inevitably lead to more profit in his business—to better education for his family, to a more comfortable home, and to the conveniences and privileges that go with real prosperity.

The faults and failings of the worth-

HOOF HINTS.

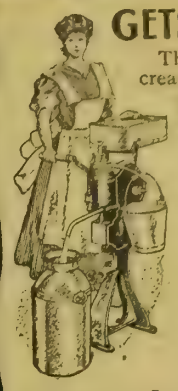
The sole of the horse's foot should be kept perfectly level, as any undue weight on one side of the foot may lead to injuries of the joints. All loose horn should be removed, and the wall of the hoof levelled with the sole. The bars should not be cut away, as they act as natural braces to the heels, and the frog is to be left in its normal size and shape to act as a cushion for the foot. After the foot is brought to its normal form the shoe should be made and fitted to it. The shoe must be of the exact size of the foot, so that it will come flush with the outer edge of the hoof. The nail holes should not be very close to the edge of the shoe, for in that case it is necessary to drive the nails too far up into the wall to make them hold. The shoe should be fitted cold, or just touched to the foot while hot, never burnt into position. The nails should be small and when driven should be brought out well down into the hoof. If driven too high, when the horse is reshod the former nail holes are near the edge and serve to weaken the hoof and interfere with the driving of new nails. After the shoe is fastened the nails are to be clinched in small grooves placed for the purpose. After this is done the clinches may be smothed with the rasp, but the outside of the hoof should not be rasped, as this will remove its natural protective covering.—Dr. N. S. Mayo.

"So you are on a star tour," said the circus lion to the dancing bear; "pray tell me is that fellow there with the chain your manager?"

"Yes," replied the bear, "and also my leading man."

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fere Outfits See O. J. Weder Co., 555-557 So. Los Angeles St., Los Angeles.

GETS BIGGEST PROFITS FROM MILK



The chief reason you want a separator is to get more cream—more money—out of your milk. Then if you want to get the most you'll naturally want the separator that gets the most cream. That's the improved

U. S. CREAM SEPARATOR

Holds World's Record for Cleanest Skimming.

It's the bowl that skims the cream. Inside the U. S. bowl are only two, simple, easy-to-clean, strong parts, but it gets all the cream—the World's Record guarantees it. Our free, new book shows four pictures of the bowl, explains why it skims cleanest and how it made the World's Record.

Also shows the solid low frame, enclosed light-running gearing, simple, automatic oiling device—everything about the construction and operation of the U. S. 27 pictures.

Just mail us today a postal card asking for "Construction Catalogue No. 120" and learn all about a machine that will get more cream—more money—for you.

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

PROMPT DELIVERY. Eighteen Distributing Warehouses. NO DELAY.

467

Prompt Delivery Assured California Customers from San Francisco warehouse. No delays. Address all letters to Bellows Falls, Vt.

A Noted Herd of Jersey Cattle

A great opportunity is now offered to secure one of the finest herds of Jersey Cattle, one which California has not seen in many a day. It is the famous

Gen. W. R. Shafter Herd

Which was gathered together without regard to expense, the only demand being **quality.** "Is she a doer as well as a good looker?"

In this herd, some bred originally by Shields, Pierce and other best breeders and later some by Gen. Shafter himself, are many prize winners. A detailed record of each animal will be sent on application.

The whole herd will be sold in a body if satisfactory bid is received by Aprll 1st. After that individual animals will be sold.

W. H. McKittrick, Executor W. R. Shafter Estate
Bakersfield, California

less cow have cancelled or concealed the profits of the good cow, just as human idlers are a tax upon their fellows. The good cow has to do the work for both. Not knowing the production of either, the dairyman has overestimated the poor cow and underestimated the good one.

One cow of the good kind, producing 300 pounds of butter fat per year, is actually worth to the dairyman more than forty cows of the other kind. When the dairyman knows the good cows in his herd—knows how good they are—he will be just as anxious to tie to them as they are willing and faithful to serve him.

When will the dairymen start the rebellion (and the test,) throw off his fetters, and fill his barn with the kind of cows that are glad to earn him good money and make possible a better way of living for his whole family?

PUMPKIN TESTS—COW FEED.

The pumpkin in some form or other has always been palatable to the people of the Northern section of the Union. The very first poem by a New Englander has a stanza in its praise. Whittier's poem on pumpkin pie is known to all, as is Riley's celebrating the season "when the frost is on the punkin an' the fodder's in the shock." Wherefore, it is not surprising that that thrifty and enterprising people have tested its merits as a food for milk cows.

A writer on proper foods for the Eastern States observes that he has found in the feeding of pumpkins that he can give about 4 pounds per day per cow with advantage, and with some cows the milk production will be greatly increased. He has had occasional cows, however, to lay on fat and decrease their milk production from this food. He thinks there are few experiments to which we can point relative to the value of feeding pumpkins. In one experiment there was a gain of 6 per cent. more milk when they were fed than before they were admitted into the ration. This was the result, too, when the dry matter was so decreased in the ration that the increase of milk based on the units of dry matter in the food, amounted to 10 per cent. The milk did not in any way deteriorate in quality. In another test the cows fed on pumpkins produced 5 per cent. more milk than cows fed on silage, and where compared with dry hay the increase was great.

It has come down as a saying of the foreparents that pumpkins will make the cow go dry. The practical views of the "old folks"—based on experience—are often serviceable today. But it is probable that, if any tendency from feeding this ration was toward drying up the milk, it was due to feeding the seeds. This could be obviated by separating the seeds from the pulp before feeding.

Because of their abundance and the ease with which they are grown, it would not be a bad plan for the farmers to give them a little more attention. In the Eastern States they are fed in the fall and early months. In California they can be kept all winter.

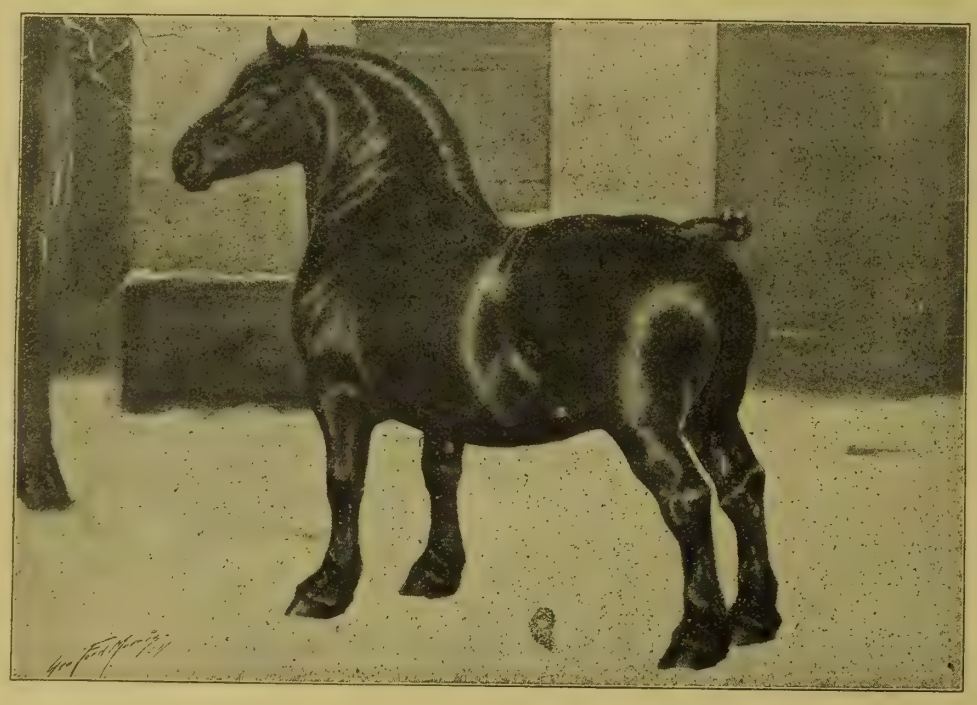
FEED FOR DRY COWS.

Too often persons neglect to give the cow that is dry enough feed. They think she does not need much to eat when she is giving no milk.

This is a mistake. At that time the unborn calf is demanding much of her vitality. Any sort of fodder or roughness is offered her, in the hope that she will get through all right.

It is held that the people of the city slums are degenerating because of an insufficiency of food. In some instances public school children are being given free a meal a day, where it is seen that they have not had proper nourishment at home. It stands to reason that the lower animals need the right sort of nourishment to keep them going, too. You may give them a large amount of musty hay or rotten nubbings, but you need not flatter yourself that either will make them thrive. Might as well feed them too little as to throw down something they cannot eat.

The Emperor of China has the finest tea gardens in the world.



Trappiste No. 1899

The illustration above shown is the largest Belgian Stallion in America and also in Belgium, his native country. He took first prize and the Grand Champion prize at the St. Louis Fair in 1904, and at the California State Fair in 1906. He weighs 2375 lbs. This stallion is said to be the greatest living draft horse in the world, and has more honors gained at expositions than any other living stallion.

Trappiste is now a California horse and his get will soon manifest its influence on the horses of this State.

Chicago, Ill. July, 1906.
Tuttle's Elixir Company.
Gentlemen:— Boston, Mass.

I thank you through your agent, Prof. C. F. Tuttle, 311 East 63rd St., Chicago, for what Tuttle's Elixir has done for one of our mares. She had been lame in one of her hind legs for some two years and couldn't work one-half the time. Your agent pronounced the trouble muscular rheumatism and gave me directions for treating with Tuttle's Elixir. I followed these directions and am pleased to report that for the last four months, the mare has not lost a single day's work. She is now entirely well. Have used your remedies on other horses with most satisfactory results. John B. Frye., Barn Supt. Bowman Dairy Company. 76th, and Wentworth Ave.

The California Fertilizer Works have opened a southern office at 216 Grosse Building, Los Angeles, under the management of Mr. W. J. Benjamin. Have also just completed four new warehouses, hoping to be able to supply more promptly the increased demands for their product.

The Southern warehouses are located at the following places: Pomona, Ontario, Arlington and Riverside.

Home Light.

Farmers are recognizing the great convenience of a good light, and we are frequently in receipt of enquiries as to which gas machine will give the greatest satisfaction at the smallest cost. We do not care to go on record as making your selection, but the Superior Generator has always met the requirements in the line of a gas producer, and the fact that it sells at a moderate price makes it doubly attractive. The country home is deprived of a great comfort if it is not supplied with gas.

The Superior can be arranged to supply gas to any house, whether old or new, and the entire piping can be done by any gas fitter.

The Superior Light and Heat Company have a catalogue which they send to all readers of the Cultivator who write for it. If you state the number of lights you use they will give you full information as to the cost of the size generator required and the expense of installing it. You will be suprised to learn how reasonably it

The Louse Question

When your animals rub incessantly at this season of the year, look out for lice. This is especially true of calves and colts. To meet this condition Dr. Hess (M.D., D.V.S.) formulated the famous Instant Louse Killer, which kills lice on stock and poultry.

INSTANT LOUSE KILLER

kills ticks on sheep. It, being a powder, can be applied in zero weather. Do not wait for warm weather; do not let the tick eat up your profits; kill him on the spot with Instant Louse Killer. Put up in round cans with perforated top, full pound 25 cts. Sold on a positive written guarantee. Be sure of the word "Instant" on the can; there are 25 imitators.

1 lb. 35 cts. 3 lbs. 85 cts.

If your dealer cannot supply you, send your order to us.

Manufactured by
DR. HESS & CLARK,
Ashland, Ohio.
THE PETALUMA INCUBATOR CO.,
Petaluma, California.
Pacific Coast Distributors.

Malthoid Roofing

Every farmer should have a roll or two of Malthoid Roofing constantly on hand.

Malthoid comes in rolls and is most convenient for making temporary sheds, repairing roofs, etc. It is a small investment that represents a big saving. Send for booklets.

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Five Pounds of Sparr's Highest Grade Ceylon Tea

Sent Prepaid to any address on the Pacific Coast for $2.50. Send P. O. Money Order or Personal Check.

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FOR SALE—

PERCHERON HORSES
HOLSTEIN CATTLE...

2 Young Black Percheron Stallions
5 Young Holstein Bulls
10 Young Holstein Heifers
ALL REGISTERED

Minnewawa Stock Farm
Fresno, California.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

VENADERA HERD OF REGISTERED JERSEYS

FOR SALE—RICHLY-BRED YOUNG bulls from cow having High Official Yearly Records. Also a few heifer calves of best breeding. For particulars address

GUY H. MILLER,
French Camp,
San Joaquin county, Cal.

OAKHURST JERSEYS

Fine young Bulls, by a magnificent son of Golden Ferns, had out of imported cows. Also a bull calf out of a daughter of Golden Lad by a son of Golden Lad, making him 50 per cent. Golden Lad. We sold his full brother to the late Gen. Shafter, who won in every class he showed him in at Sacramento in 1905. Will sell at low prices considering breeding, to make room for new stock.

L. BRADBURY, Duarte, California.

Live Oaks Farm

Frank A. Meacham, Proprietor.

Importer and breeder of RED POLLED CATTLE, SHROPSHIRE SHEEP, RAMBOUILLET SHEEP, HORNLESS AMERICAN MERINO SHEEP. Both sexes for sale. Take electric car at Petaluma or Santa Rosa for LIVE OAKS STATION. Address all mail to Petaluma, Sonoma Co., Cal.

Tuttle's Elixir

Sovereign Horse Remedy.

We offer $100. for any case of colic, curb, splint or lameness it fails to cure when we say cure is possible. Our great book, "Veterinary Experience." free. 100 pages, a perfect guide. Send for copy.

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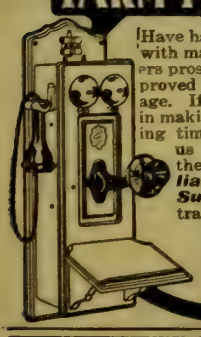

Have had as much to do with making the farmers prosperous as any improved implement of the age. If you are interested in making money and saving time and worry, write us for booklet, "Over the Wire." The Williams Telephone & Supply Co., 133 Central Ave., Cleveland, O 1067 Oak St., Oakland, California

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Heavy Laying, prize winning Strain. Eggs $2 for 15: Baby Chicks, 20 cents each. CANNON POULTRY CO.
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ISLAND BRED JERSEYS.

About two years ago I read in a pamphlet published by J. O. Terell & Sons of San Antonio, Tex., this statement. "About 15 per cent of the Herefords and 20 per cent. of the Short-horns (Durhams,) that are purchased in England for transportation to the United States, are condemned by our health authorities because found to be afflicted with tuberculosis, but not a single case of tuberculosis has ever been found among the importations of Jerseys."

A few months ago there was published the per cent. of cattle afflicted with this disease, which stated the various breeds. And while the per cent. was less for the Jerseys than other dairy herds there was not a great difference. This was published in the Cultivator. I immediately sent the clipping to Mr. Terrel. Mr. Terrel advised me that he would immediately take the matter up with parties in Washington, D. C., whom he had heard declare many times what he had published.

This is the letter from R. H. Hickman, chief of Quarantine Division:

"Referring to your letter of the 10th instant inclosing a clipping from the California Cultivator, I beg to advise that the tuberculin tests of Jersey and Guernsey cattle by Dr. T. A. Geddes, bureau inspector in Great Britain, were not made on the Islands where these cattle originate. Cattle coming directly to United States from the Islands of Jersey and Guernsey are not tested with tuberculin, while cattle of these breeds imported from England are tested. Please find herewith inclosed marked copy of B. A. I. order 109, regulations governing the importations of animals subject to inspection and quarantine.—R. W. Hickman.

To any one who may doubt, this is an overwhelming proof of the contagiousness of tuberculosis. There is none on the Islands and none can get there, for importations are prohibited. But let these Island bred once in England and they must be tested less they may have caught the plague, and tests show some of them have.

Tuberculin test for cattle.

The following is the regulation referred to by Mr. Hickman:

All cattle over six months old imported from Great Britain directly into the United States, which are subject to quarantine, except as otherwise provided, shall be tested with tuberculin by an inspector of this department, stationed in that country, or after arrival at the animal quarantine station at the port of entry.

Cattle from countries not otherwise provided for shall be tested in the said quarantine station. All cattle so tested, which show a reaction shall be prohibited from entry into the United States or be disposed of as provided in section 10 of these regulations. Cattle imported into the United States directly from the islands of Jersey and Guernsey may be admitted without being tested with tuberculin. —J. M. H., Los Angeles.

J. A. Ryden of Arcata, has brought from Rasmus Anderson the registered Holstein-Friesian cows, Grace of Warren Creek and Queen of Warren Creek.

A rabbit hunt on an extensive scale is planned for the Elmwood section of Stanislaus county on February 14th. Everybody is invited. The plan is to use shotguns and to advance across the lands in a long line.

For a Good, Practical Milking Machine see the O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

THE SUPERIORITY OF THE MULE.

The mule is less nervous than the horse and therefore loses less energy in useless fretting. In fact, one of the chief characteristics of the mule is his ability to take care of himself under all circumstances. Much of the apparent shirking which is charged against the mule is an inborn tendency to husband his strength and make every effort count. The result of this instinctive care on the part of the mule is that he is able to turn out more work than would be possible for a horse of the same weight under the same conditions. The mule instinctively avoids holes, sharp obstacles, barbed wire fences and various other forms of danger which are not so successfully avoided by horses. It is a matter of common observation that in instances where mules run away they seldom injure themselves to any serious extent. In mining, mules are quite superior to horses for the reason that they seem to understand the requirements and dangers of the work more clearly than horses.

When Dehorn.

Please tell me at what age to dehorn a calf?—S. B., Gridley.

Calves may be dehorned when four days old. Clip hair from around rudimentary horns and rub with a stick of caustic potash, but this is a mighty poor way and a mighty poor time to dehorn. Read Mrs. Sherman on the subject in recent issues of the Cultivator.

Do Healthy Animals Need A Tonic?

This question is often raised among users of stock foods. They ask the question." Does a person in health need medicine?"

It is probably true that if stock were fed for the same purpose that the human being is nourished, there would be no occasion for the use of medicinal tonics under ordinary conditions.

We have most of us learned by experience the evil of over-eating, and endeavor to select foods most agreeable to our digestion. Furthermore, we exert an effort to consume only sufficient food to sustain life and repair waste. In fact, we do not aim at putting on weight, and in many cases just the opposite result is hoped for, but if the cow, steer or hog would be given only sufficient food to sustain life and repair waste, no gain would be perceptible; we fully realize that the food consumed that doesn't produce additional weight or milk is entirely wasted, the profit, therefore, being derived from the food consumed in addition to that which is required to sustain life and repair tissue.

Over-feeding, threfore, is a necessity; and the results similar, as in the case of the human. Then again, the animal has not the opportunity of selecting the foods most suitable to its digestion.

Medicinal stock tonics, therefore, must be entitled to a place in the economy of skillful feeding, and the stock preparations that contain the ingredients that have been tested in the medical institutions of our country and found valuable, are being sought after by a large percentage of expert feeders.

Dr. Hess Stock Food is the product of science; it is the result of Dr. Hess' twenty years' experience in the study and practice of medicine, both human and veterinary.

It contains the bitter tonics long known in medicine for improving the appetite and increasing the flow of juices necessary to assimilation; it furnishes the animal system with iron, the greatest of blood and tissue builders; together with the nitrates of sodium and potassium which assist nature in eliminating poisonous waste material from the system, and relaxatives which regulate the bowels.

Anyone doubting the virtue of a formula of this character has only to refer to the medical authorities of the country or to his own physician or veterinarian.

If you have never used Dr. Hess Stock Food, write to Dr. Hess & Clark, Ashland, Ohio.

If Dr. Hess Stock Food fails to increase growth and milk production sufficient to pay for itself many times over, your money will be refunded.

This newspaper indorses our guarantee.

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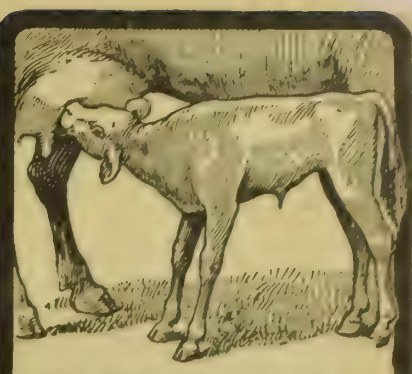

STOCK INSURANCE.

Dr. Hess Stock Food insures a healthy condition of both dam and offspring; it also counteracts the danger of over-feeding. Think of the vitality given off in milking and the strain on the system due to calving. Then you can form some idea of the necessity for tonics. Stock fed for market are also over-fed continually and need something to assist digestion. Professors Winslow, Quitman, Finlay Dun, and all noted authorities, recommend bitter tonics for improving digestion—iron for the blood, nitrates for assisting nature in throwing off poisonous waste material from the system. Such ingredients are incorporated in

DR HESS STOCK FOOD ATONIC

The Prescription of Dr. Hess (M.D., D.V.S.), and besides it is

Sold on a Written Guarantee.
100 lbs. $7.00
25 lb. pail $2.00
Smaller quantities at a slight advance.

Where Dr. Hess Stock Food differs in particular is in the dose—it's small and fed but twice a day, which proves it has the most digestive strength to the pound. Our Government recognizes Dr. Hess Stock Food as a medicinal tonic and this paper is back of the guarantee.

If your dealer cannot supply you, we will.

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If interested in Herefords or Polled Herefords (natural muleys) send 10 cents for a year's trial subscription to the
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The following collection of vines could hardly be improved upon. Special attention is called to the Japanese Honeysuckle, Scarlet Trumpet Creeper, and Variegated English Ivy, all possessing so many exceptional qualities that we believe everyone will want them. Both the Creeper and English Ivy are new. All the varieties named below have been brought to the highest state of perfection by the Chas. H. Lilly Co. The descriptions give a condensed idea of their differing characteristics and unusual excellence. Each will fulfill far more than ordinary expectations. Note our Special Offer.

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This magnificent climber is as well adapted to United States growth—particularly on the Pacific Coast—as in its native clime on the Japanese Isle, where, for many years, the little brown people, so fond of nature and flowers, have been improving and perfecting it, until now it is probably the peer of all varieties in this class of plants. A sturdy, rapid grower, and needs little tying, if any. In sixty days after planting puts forth a marvelous mantle of green, luxuriantly clustered with dainty white flowers turning to yellow; blooms constantly. Delightfully fragrant, and brings the rare perfume of the Orient to your very doors. Cleanly—free from insect pests. In Western Washington, Oregon and California retains its foliage entire year. Will transform your arbors, porches, or fences into bowers of beauty. Each, Postpaid, 25c.

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Sweet Scented Monthly—Noted for continuous production of large trusses of splendid red and yellow fragrant flowers, also for its rapid growth and mass of heavy leathery green foliage. One of the best Pacific Coast varieties, but stands a very severe climate, and therefore desirable for planting anywhere. Each, Postpaid, 25c.

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Bigonia Radicans—This splendid hardy vine is new, and will be a great favorite as it becomes better known, for it is a strong, rapid grower and its flowers are both luxuriant and striking. As name signifies, the blooms are trumpet shaped—about 2½ inches in length—and a beautiful orange red. For rock work, crevices, ledges, and any purpose to which a climbing vine can be put, it cannot be too highly recommended. By supporting stem and proper pruning to tree shape, it is also very effective. Particularly adapted to Pacific Coast soil and climate; does well in dry soils, rooting deeply. Each, Postpaid, 35c.

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A new variety, and bids fair to be the most popular of all Ivy strains, as its merits become better recognized. Has every advantage of the hardy old English Ivy, but instead of solid green leaves, foliage is mottled with white blended with a delicate trace of yellow and a faint touch of red, making a highly pleasing effect. The handsome foliage remains the same the year 'round — a very attractive feature. An excellent vine for walls, trellis, trees, fences, etc.; also fine for window boxes, hanging baskets, etc.; grows practically everywhere. Each, Postpaid, 25c.

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WRITE FOR PAMPHLET AND PRICES

The Ornamental Garden

By ERNEST BRAUNTON

FEBRUARY WORK.

NOW IS the golden time of all the year for gardening and every day should be counted lost on which no garden work is accomplished. Unless unlooked-for and unusually heavy, unbroken rain falls all dormant plant life will begin to respond to the genial warmth of spring and the rapidly increasing power of the sun will stimulate them into growths all but marvellous.

There is scarcely any question but plant life has received all needed moisture during the past two months, but with returning activities more moisture and a constant fresh supply will be needed. See that plants now springing into seasonal growth have the soil loosened about them so that it will receive and hold the moisture; also keep up proper cultivation, not alone to conserve the moisture, but to destroy all weed seeds as soon as they sprout.

Lawns may now be fertilized, likewise roses and all real hardy plants. Do not, however, bother with bananas, cannas, elephant ears, callas and plants of this class, for they are unresponsive for some time yet and the soil being over-full of moisture, the fertilizer will be washed away before the time when the plants can use it. More than that, we may have frosts which will farther damage or even kill some of these tropical foliage plants that have little or no bulb or corm below the surface.

Get rid of all rubbish, beds of dry leaves and such stuff by burning. Garden pests, both insects and fungous diseases, are wintered over in rubbish and may now be effectually destroyed. If left to hatch out and multiply they may soon increase an hundred-fold and prove serious menace to some pet crop of flowers—"a stitch in time saves nine," and "an ounce of prevention is worth a pound of cure," are good maxims for the gardener to keep in mind.

PLANTING ORNAMENTAL TREES

The best and surest successful results with deciduous ornamentals will be obtained by first of all having wherever possible a rich, deep, mellow soil which is well drained, either artificially or naturally. The holes should be dug at least two feet in diameter and two feet deep, according to the size of the tree. The first foot of top soil should be placed on one side of the hole and kept separated from the remainder, as it is the richest, and will be needed in planting the tree. Trim off all the broken and bruised ends of the roots with a sharp knife, preferably by a slanting cut.

Take the tree from the bale or box or trench and subject the roots to a mud bath as previously described. The little fine rootlets being then covered with a sticky mud act as tiny magnets, to which the dry particles of soil adhere closely, supplying it immediately with plant food as soon as the rootlets start to grow.

In planting care should be taken that the tree when fixed in the soil should not be much deeper than when in the nursery, and that the top soil is as nearly as possible placed in and around the roots without leaving any cavities.

Do not put manure, and especially fresh manure, in the bottom of the hole so that it will come in contact with the roots. It is nearly sure to burn them. When there is a hardpan near the surface of the ground it will frequently be found necessary to blast through it and secure drainage, although poplars and willows, which are water loving trees, can be grown well without drainage, providing the hole is made large enough to supply it with sufficient soil for its nourishment.

In watering, care should be taken not to leave a depression directly around the stem of the tree in which water will gather. When the weather is warm this puddle of water becomes exceedingly hot, and is almost sure to injure the bark and cause the tree to die.

INSECT PESTS.

Numerous insects and fungi infest garden plants. These must be watched for, and attacked just as soon as they appear. The best all-round insecticide for biting insects (all beetles and "worms") is Paris green. Nearly every one now knows how to use this material. It is, of course, very poisonous. For sucking insects (as plant-lice) kerosene emulsion is a standard remedy. White hellebore is useful in some cases, if fresh, as for currant-worms, and is safer than Paris green to use on fruits and vegetables that will soon be large enough to eat.

The standard fungicide (for mildew, many kinds of blights) is Bordeaux mixture. Following are simple directions (written by John W. Spencer) for preparing it:

The three essential ingredients in the preparation of Bordeaux mixture are:

1. Sulfate of copper (bluestone.) As a preventive against the growth of fungus.

2. Lime. Chiefly to overcome the corrosive action of the copper sulfate, which is injurious to foliage.

3. Ferrocyanide of potassium (yellow prussiate of potash.) To indicate when enough lime has been mixed with the copper sulfate.

Fill a barrel, a half barrel, or a keg, as your needs may require, with water. One gallon of water at ordinary temperature will hold in solution about three pounds of copper sulfate (at 60 degrees Fahrenheit water will hold in saturated solution 50 ounces of the sulfate.)

Therefore, if you wish to avoid the trouble of weighing the copper sulfate, hang in a gunny sack in the top of the barrel of water a little more of the sulfate than will dissolve in twenty-four hours or more; the water will then contain approximately three pounds of sulfate to each gallon. Thus, when a gallon of the solution is put into the spray-barrel, three pounds of copper sulfate will go with it. A more accurate method, of course, is to weigh the copper sulfate to formula. Copper sulfate may be kept in solution for many weeks.

Air-slaked lime should not be used. Take the best freshly burned lime. Select enough lumps to cover the bottom of a water-tight barrel. Pour on the lumps enough water—hot water preferred—to cause the lumps to crumble into a fine powder. Repeat the process until the barrel is one-third to one-half full of slaked lime. Then fill the barrel with water to within six inches of the top. By keeping the lime covered with water it may be kept all summer without deterioration, as may the copper sulfate when dissolved. Both will then be ready for immediate use at any time.

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Janet Scott—Rich soft salmon pink. 10c.
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Phenomenal — Orchid flowering, blue edged white. 15c.

Theodore Payne, 345 S. Main st. Los Angeles

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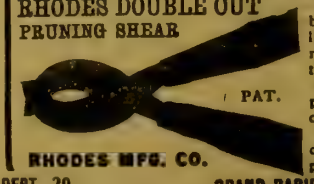

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(Improved) Lady Thompson	1.50

All plants fresh from the east last spring, and were raised on virgin soil. Write for prices on 100,000 lots.

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Headquarters For The
Burbank Beauty
A real beauty and the earliest and most vigorous of all strawberries. A good table berry and will ship further than any other berry. $3.00 per thousand.
Brandywines—The old standard variety of the southwest. Can fill orders by the thousand, hundred thousand or million. $2.00 per thousand. Plants carefully packed and we guarantee their arrival in good condition.
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Strawberry Plants
150,000 Brandywines
200,000 Klondyke
and a few Arizonas
All First-Class Plants
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Early Cuthbert Raspberry Plants
I have Twenty-Five Thousand Early Cuthbert Raspberry Plants to sell at Six Dollars per Thousand.
L. D. Woodworth, Covina, Cal.

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$2.00 per hundred, $15.00 per thousand. Crandall's Early Blackberry, Cuthbert Raspberry, Lucretia Dewberry, $1.50 per hundred, $10.00 per thousand. All plants carefully packed.
Fairview Farm Nursery
G. H. Hopkins, Prop., Burbank, Cal.

STRAWBERRY PLANTS
800,000 Brandywines
400,000 A1
20,000 Pride of Michigan
All grown from Kellogg Stock and guaranteed First-Class Plants. Write for prices.
F. P. BALDOSSER, Covina, California

Lady Thompson Strawberry Plants
$1.50 per Thousand
M. J. Rooks - Azusa, Cal.

The Vegetable Garden

By ERNEST BRAUNTON

SOIL PREPARATION.

TOO MUCH attention cannot be given to the preparation of garden soils. The writer has experimented along this line for a number of years and has never tried a crop that did not respond nobly and satisfactorily to deep turning and loosening of the soil.

Many people, in early spring, where sowing lettuce and radish seeds are heard to say: "Oh, my soil is light and friable and such seeds just grow and bring good results by just raking them into the surface without spading or plowing."

Two years ago the writer was gardening in the lightest and most friable soil to be found, soil that never did and could not pack hard and cement-like. This soil had grown mixed garden crops the previous year and had been freely cultivated and was in fair condition.

Two plats were selected and sown to the same seeds, three sorts of lettuce and three sorts of radishes. One bed was disturbed only to the depth of about two inches and the other was double-spaded, that is, a furrow across the bed was spaded and the bottom of this furrow was spaded up. No fertilizer was used except a little sown on top of each bed and this was extremely light.

The crops from the deep spaded beds were little short of phenomenal. Never before, in nearly twenty years experience, did the writer ever grow such satisfactory crops of the two esculents above noted. Next year four beds were so treated, spaded at four different depths, and results were in accordance with the depth of the seed bed. The value of deep stirring of the soil is beyond question, but we have occasionally to try some experiments like the above, in order to see what the profit over ordinary soil scratching.

After planting, soil tillage is just as necessary if we are not situated to irrigate easily and cheaply when desirable, in order to conserve the soil moisture. It is also advisable to keep the soil well aerated, more especially while the plants are young and the root system undergoing its most rapid development. After a time, when the fruiting or maturing stage arrives the roots harden up, cease their activities somewhat and it little matters about air and water supply.

HOT BEDS.

Vegetables are of two classes, those which are hardy and will mature if sown or planted in the open ground in early spring, and those which are benefited by having the growing season artificially lengthened by being started under glass in a miniature hothouse—a hotbed. This is a frame or box with a transparent covering and furnished with artificial heat.

The size of a hotbed is computed by the number of sash required to cover it. An ordinary sash has a surface area of 3x6 feet. A bed covered by four sash is called a frame. A single sash has capacity enough to grow plants for a family of six. How is the bed prepared? Choose a dry, sheltered spot in the garden. Dig a pit 18 inches deep and 12 inches wider and longer than the size of the frame. Fill the pit with fresh horse manure, packed firmly and evenly. Place a thin layer of straw over the manure. This serves to distribute the heat uniformly to the soil above. Now place the frame, which is 10 to - inches high, in position, cover the manure with 3 or 4 inches of fine soil, and put on the sash. A light cover of oiled muslin may be used instead of glass if the sash can not be employed. The sash should slope southward.

The manure will heat up rather violently at first. After the heat begins to subside, and when a thermometer shows a temperature of 90 degrees in the manure, the seed may be sown. A pit may be dispensed with by piling the heating material in a compact heap on the surface of the ground and placing the frame on top. In this little glass-covered house sow the tomato, egg-plant, cabbage, and cauliflower seed and such other things as need an early start. You will probably have room also for some of the annual flowers which need a little "coddling" in the fore part of the season in order to reach the blooming stage reasonably early.

THE HOME GARDEN.

The housewife cannot undertake it alone. She must enlist the interest and sympathy of husband and children. Make the children partners in the enterprise. If possible give each a share in the receipts from the sale of products as well as in the work of caring for the garden. The garden should prove a source of revenue. Long Island farmers sometimes make a profit of $1000 from a single acre in one season. This is done by thorough tillage and by using every foot of surface area. At least two crops are grown each season.

Consult your agricultural papers for seedmen's advertisements and write for catalogues. Order standard varieties at first. Try novelties in a small way. Take your children into your confidence and let each have a part in making out the order. Each will have a special interest in some one fruit or vegetable. This will do much towards stimulating interest at first, and the products themselves ought to keep it alive. There is joy in garden-making, and there is health in "garden sass." Let us help you in any way we can. Insects will invade, and diseases will appear. The bulletins of the experiment stations describe remedies for various kinds of enemies.

The 1907 Girl Yours for the Asking.

Have you made her acquaintance? Now is your only chance. After much trouble and expense, The Sharples Separator Company, of West Chester, Pa., have succeeded beyond their hopes in producing from life, in the softest and daintiest colors, the sweetest dairy maid that ever graced a cream separator calendar or was ever offered by any cream separator company as a free picture suitable for framing. This calendar and this free picture are like the Sharples Dairy Tubular Separator— you can't appreciate either of them until you see them. Worthy a place in every home. The Sharples Separator Company will send the calendar with this picture on it to you, free, for the names of two neighbors who keep cows but have no Tubular Cream Separator. Or they will send free the same picture, made larger for framing and without the calendar pad attached, for the names of five neighbors who keep cows but have no Tubular Cream Separator. Calendar and picture both sent free for the names of seven neighbors who keep cows but have no Tubular. Write at once before the supply is gone, sending two names for the calendar with smaller pictures on it, or five for the large picture without calendar pad attached, or seven for both. You must mention the name of this paper to get them. Address The Sharples Separator Company, West Chester, Pa., Chicago, Ill., Toronto, Can.

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A Fine Stock of Superlative Raspberry, also Fruit Trees and Vines of All Sorts. Both Phones.
P. S.—See Article in Cultivator on Page 560, issue of December 6th.

New Muskmelon
The new muskmelon pictured and described on the Cultivator cover of Jan. 10th is handled exclusively by
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Bees and Their Care

ENEMIES OF THE BEE.

IT is more than probable that the bee moth is considered one of the worst enemies of the honey bee, and works more destruction than all the other enemies combined. If such is really the case, then we can consider ourselves fortunate, for there is a way to overcome this destroyer. When we hear a person complaining that the wax worm has killed his bees, we may be sure that he understands very little about bee culture. The fact of the matter is that nearly all summer long there are plenty of moth millers flitting about the apiary, seeking a place to deposit their eggs. Should they, perchance, find a hive that has only half enough bees to cover its combs, they are ever ready to avail themselves of an opportunity, and so begin immediately to lay eggs in the empty combs. In a few days the wax worm hatches and begins to feed upon the combs and fill the space full of weeds. The moth miller is possibly attracted by some odor, it may be the wax, the bee bread or something else about the hive. If possible, she goes to the combs, or else she lays her eggs as near to them as she can get. I have frequently had combs attacked that could not possibly be reached by the moth. The eggs hatched and if possible the larvae proceed at once to feed on the pollen or bee bread, tunneling the combs and fashioning their silken runways. If the comb is not close at hand, they are guided by a sense which in insect life is more delicate than we can understand, and commence operations. The means for prevention are very simple; try to keep all colonies strong. Should you, however, have some weak ones, take away the combs which they are unable to use, and give them a frame or two of hatching brood from some strong colony which is able to spare them, and give the strong colony the empty combs, which they will quickly make use of.

Ants are also considered an enemy to the honey bee. They have been known to destroy many colonies; especially in the South, where, in some localities, it is necessary to mount the hives on legs, and keep the legs smeared with soft tar. But here in New Jersey, so far as I have learned, the ants care more for the warmth of the hive than they do for the honey. Every spring I find ants under the hood of my hives, and hundreds of eggs, too, but I have never found any in the body of the hives where the bees and the honey are.

Toads are also without question enemies to the honey bee. It seems strange that anyone should keep bees for any length of time without finding out that toads are among their worst deadly enemies. They operate very stealthily, and have a way of darting out their tongues with lightning-like rapidity, so that without close and careful observation their true character may easily be overlooked. Toward nightfall they usually station themselves at the entrance of the hives, and with their long tongues snap up all the bees within reach. It is hard to tell how many bees it takes to make a meal, but they seem to disappear as by magic. It is therefore necessary to keep the hives mounted on stands at least eight or ten inches high, or even higher if convenient.

Mice also are enemies to the honey bee. They are especially fond of honey, and often work havoc with the bee. Mice are also particularly fond of bees and bee bread as well. Besides, a hive of combs is a splendid place for them to build their nests, consequently if they can possibly reach the combs, they are liable to do much damage in a short time. They, of course, can only harm when they get inside of the hives. We, therefore, advise that the entrances of the hives should be long and shallow in preference to round holes, not more than a half-inch high, and across the whole front of the hive. This space will give ample ventilation for the bees.—F. G. H.

WILD BEES ARE USEFUL.

The honey bee is of value to the farmer in more ways than one. It is a source of income with little labor, furnishes the table with one of the choicest sweets, and is indispensable as a pollenizer of fruit. The bees should be in a secluded spot, far enough from the house so that they will not become a nuisance instead of a pleasure. The early swarms are most profitable to keep, as they have time to fill their hives with honey to run them through the winter season, while a late swarm will have to be fed, and is usually not strong. If the summer has been a poor one for the bees, they should be fed through the winter. If they do not eat old honey, rye flour or pure candy, you can rest assured that they have plenty of honey; but if you are not positive about it, you had better place feed for them until you are satisfied they are not in need. The hives should have shelter over them, and are very convenient in the orchard, if it is not situated too far from the house to watch for swarms. White clover is the best for honey; buckwheat is valuable also.

Do not molest the bees more than is necessary to take the honey or make needful examinations. If you are keeping bees to sell honey, the pound section boxes are best and most convenient to place in the caps, as they can be taken out and the honey marketed in them just as it comes from the hive. Honey is a healthful sweet, as it is pure, and it is useful as a medicine in some cases of sickness.

Every farmer who has fruit, small or large, should keep bees. They go from tree to tree, or plant to plant, and carry pollen on their feet, thereby fertilizing the blossom and making a heavier yield of fruit than would be if no bees were kept. Even the wild bees are useful to the farmer and should be protected.

The nation's capital has the largest collection of anthropological specimens on the face of the globe. Four thousand to 5000 skulls and skeletons of human beings are here preserved. Two hundred brains are arrayed in jars. These are exhibited with those of animals for the purpose of comparison.

Let me pilot you afar
Where the redwood forests are,
And the turquoise sky leans to the turquoise sea;
Through the wondrous gate of gold
Where the poppy fields unfold,
And the mission bells call "Benedicte."

The closer money is the harder it is to get next to it.

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High fertility guaranteed.
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IMPROVEMENT OF CITRUS FRUIT VARIETIES.

Continued from page 123

composition. Those who are disposed to exalt the humid-air orange for superior sweetness forget that the California orange, as compared, for instance, with the Florida product, has not less sugar, but adds to it more acid; being, in fact, not less sweet but more sour. As both sugar and acid are nutritive substances, the superiority of the California fruit from a dietary point of view is clear. Such an orange, enclosed in a thin skin of silky texture and beautiful finish, comes very close to an ideal upon which to found an industry. How well such a type of orange serves that purpose is shown by a production for 1906 estimated to have reached a selling value of twenty million dollars—the greatest value ever attained by any state or nation in the citrus line, and delivered to purchasers at a greater average distance than any other ever attempted. Far less in degree, but similar in kind has been the development of the California lemon industry; and though its greater difficulties have been by no means overcome, the advancement in the attainment of suitable varieties has secured something suitable to build upon, as already shown.

The improvement of citrus fruit varieties as diligently pursued by expert plant breeders of the United States Bureau of Plant Industry and of the southern experiment stations is of great pomological interest and promise generally. The objects aimed at are, however, of rather remote applicability to California because the conditions to which they endeavor to adapt their new fruits of citrus origin do not exist within the range of our large commercial citrus industry. They are endeavoring, by hybridization, to induce a combination of maximum hardiness with quality by which, through selection, they may attain something at least tolerable from an amateur's point of view. They wish to produce something like an orange or like a lemon which can be grown under what are now found to be non-citrus conditions. They are inviting the most startling changes of types of citrus fruits, that some departures may fall on their side. To the Californian the work is interesting. Even if they should fail to secure an orange which would bear fruit in Pennsylvania, they may produce orange blossoms and thus minister to a charming requirement even of northern people.

But although California has no need for such changes of type in citrus fruits and has, as shown, worked so diligently and long for the attainment of the types which are at present supreme in her industry, there is still ample opportunity for improvement within the types. Such improvement is to be attained, not by hybridizing, but by selection—the very effort which has opened the way for California progress hitherto. But why need this work be pursued differently now?

In the first place the citrus interest of California is too great in its commercial and cultural problems and responsibilities to serve itself pomologically as it did at its beginning. Second, the improvement of a type, removing its defects and adding to its excellences, requires closer work than to recognize the type itself and found an industry upon it. It requires the most acute perceptions of minute characters and tendencies, and most diligent search for them. It necessitates the determination of what is absolutely the best in form, substance and finish, vigor and productiveness, and the conditions under which all these are attained. It invites the closest pursuit of the best fruit as it appears in packing-house or exhibit, or as it secures special price and fame in the trade, to the trees whence it comes. Its subsequent steps are analysis, measurement, comparison, photographic and written records and study of environment including culture, and the best possible discernment of the relations of all these determinations to each other. The supreme test is propagation under various conditions to test constancy and the last resort is multiplication that the whole industry shall have the advantage of the best thing there is of its kind to plant. Incidental to the foregoing is the test of stock on which such trees are to grow; which stocks are best for this or that, or here or there, and how has it been demonstrated?

Such work will require the services of the best trained and most expert men in pomological science. They must have good eyes and clear heads, not too much cumbered with other affairs, and they must have full knowledge of why they seek and quick recognition of the signs of appearance.

It is to secure advanced work of this kind that alert and influential orange growers at Riverside appealed successfully to the legislature of 1905 for the provision of a special Citrus Experiment Station and made a tender of valuable land for it which is now being improved, for the purpose intended, by the Experiment Station of the University of California. It is designed to be the home for such important pomological work although many other cultural phases and experimental problems of orange growing will naturally be associated in its effort. Our meeting at this time is for the purpose of marking its beginning along its designated lines. It is eminently appropriate that we should assemble for this purpose in Riverside and almost upon the very spot where the first citrus fair of the pioneers marked the first great break towards the attainment of the world's high mark in commercial production of citrus fruits which now belongs to California.

THE WRONG LAY.

A school girl in a Massachuetts town had often been made to acknowledge the superiority of her brothers. One day her mother remarked upon the apparent utter lack of intelligence in a hen.

"You can't teach a hen anything," she said. "They have ruined more of the garden than a drove of cattle would. You can teach a cat, dog or pig something, but a hen—never!"

"H'm!" exclaimed the child indignantly. "I think they know just as much as roosters!"

It is the sign of the small mind to condemn what it does not understand.

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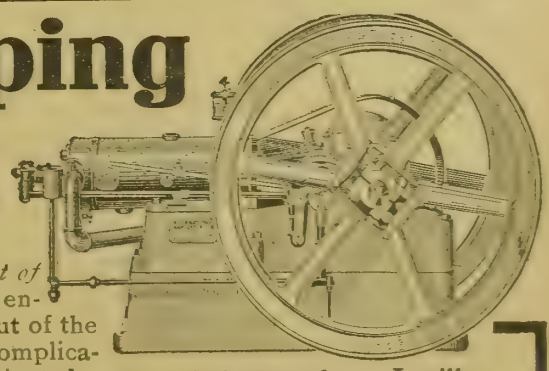

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It is the best for a number of reasons.

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CULTIVATOR APPRECIATED.

This issue of the Cultivator contains 810 inches of advertising matter, the largest number of inches of advertising the paper has ever carried in a single issue. The increased space compels an enlarged paper, to accommodate the usual run of departments, editorials and miscellaneous reading.

The value of the Cultivator as a medium for advertising results is now apparent. Advertisers get results and that is the test of value. To instance a case; a single article on the "New Muskmelon," recently brought 200 letters of inquiry to this office, and the seed house handling the melon seeds. In a smaller proportion are letters of inquiry relating to poultry, stock, farm implements, and agricultural questions. The Cultivator is simply getting its feet planted on the Pacific Coast. It's future is assured. It's field of usefulness is just opening.

PROSPEROUS YEAR AHEAD.

Whatever inconvenience we may suffer personally, from the rain and storms of the present month we are consoled in the knowledge that great prosperity lies before us as a state.

We are assured already of enough moisture to grow our crops, or to secure them, and we know too, that additional moisture will be added, the ground being now in better condition to drink in the rains to great depth than at any time in the last few years.

Comparatively little rain so far has run off, so far nearly the entire 12 inches having gone into the ground. The snows on the mountains have been heavier this season that for many past, even coursing down to the bottom of hills many places, so that we may have no fear for water in the bottoms and valleys for a long time to come.

As water is king in California, we should not Complain if the "king" bestows his blessings upon us in super-abundance. When the Owens river sends down its cohorts to reinforce natures' supply of water what a grand country we shall have. No fear then of lack of water anywhere in Southern California, and as Northern California never goes dry, and Central California seldom ever, we can sit back and wait the coming of the world to our gates with perfect impunity.

We are sending out, and shall send out over 27,000 carloads of the largest, finest—oranges over raised in California. There will return to the growers in the state, north and south, over $20,000,000 and this sum reinforced by the output from the vegetable and small fruit products will work a record-breaking year of prosperity for California.

The Cultivator will prosper with the farmer for it is his advisor and friend, and as he prospers so shall we all prosper for on the success of the individual must the success of the community and the State depend.

Now let the railroads get ready to handle the business of California, keep fruit and vegetable trains moving and all will be well with our favored state.

CENTRAL CITRUS BELT.

The Cultivator would advise the citrus growers of the Porterville-Lindsay district to arrange with the University authorities for a citrus institute, at which shall be discussed the varied phases of orange culture such as soil, planting, pruning, irrigation, fertilization, fumigation and care of the fruit. The time is not far away when the Central Citrus belt of the State will rival Southern California in quality and quantity of production. To understand properly, on the threshold of the undertaking, the scope of the business will prove of the most vital importance to the orchardists. It will give him in condensed form the education it has taken veteran growers years to acquire.

ARBOR DAY.

The annual return of Arbor Day emphasizes the importance of a general awakening of public interest along the line of tree-planting.

The State of California needs more forests. Hundreds of thousands of trees should be set out every season along the streets, the country highways and the foothills, extending well up the hillsides until they are covered.

The value of forest trees as water sheds needs no argument. All the authorities are a unit on the proposition. Not only will they conserve moisture, but tend to equalize temperature, making the summer pleasanter and the winter milder in tempering the winds.

Our forests have rapidly been cut away and burned away the past few years and no attempt has been made in a systematic manner to replace them. At the rate they have been denuded it will only be a few years until the State will be practically without shade trees, except in the towns. So we ought to be replanting, in every section of California, to the end that not only beauty in scenery may be preserved, but our water conservators enlarged.

The Cultivator trusts that every Improvement Association in the State may make an effort to celebrate Arbor Day in a fitting and practical manner.

SOUTHERN CALIFORNIA STATION.

Prof. Ralph E. Smith writing on the above topic to the Cultivator, in support of branch experiment stations, says:

"The horticultural problems of Southern California are most peculiar, those of no other section of the world being the same. They cannot be met by simple demonstration or rehearsing of facts learned in other places, or by the advice of one who has learned his facts elsewhere, however great his experience. The greatest problems, the greatest obstacles of horticulture in Southern California today are those that can be successfully met only by local, intensive, closely applied investigation of a permanently established nature.

The promoters of the Southern Branch Station attempted, conservatively and with wisdom, to provide for this need by establishing facilities in the southern part of the State which would allow the State Experiment Station at the Universiy of California to develop and improve it's activities in that section. They conceived the particular needs of their region to be, as a beginning, investigation in Plant Pathology, and in the various features of cultural practice such as affect the quality, quantity and commercial value of crops. In this their effort was well directed and their judgment good, since in these lines especially is thorough, competent and continuous investigation needed in Southern California."

Discussing the location selected by the commission for it's Exepriment Station, Prof. Smith says:

"The most important practical consideration in connection with this "Citrus Culture Station," is naturally, what is to be done with it; what will be it's lines of work; it's objects, and it's methods? This can be answered only briefly in this place. The object of the station will be to assist in the general improvement of the citrus industry in every possible way, with the hope of maintaining an increasing production of better fruit. The keynote of success in this industry is quality. Quantity in itself has it's limitations in bringing success, but there is no limit to the profitable production of quantity or quality. The production of high-grade fruit has many factors. Some of these are well understood and in general practice, others are partially so, and still others are yet to be demonstrated. The work of the Citrus Experiment Station must necessarily be slow, patient, and barren of many striking, brilliant results. The public should appreciate this and not become impatient so long as the work is prosecuted vigorously, intelligently, and with well judged objects and competent methods."

Prof. Smith writes a good deal more in detail concerning the work of the Citrus Experiment Station and makes the point very clear that the location of the station was primarily made to reach conditions existing in Southern California.

DR. HILGARD'S "SOILS."

As a fitting climax to his long and valuable services to agriculture comes Dr. E. W. Hilgard's "Soils: Their formation, properties, composition and relations to climate and plant growth in the humid and arid regions." For lack of time we have been unable to take more than a glance through this monumental work and later we will give an extended review. Those who have had time to thoroughly digest the book are loud in their praises, pronouncing it superior to anything yet published on the subject.

UNIVERSITY REPORT.

President Wheeler, in the Biennial report of the University of California, shows the loss the institution received by reason of the San Francisco disaster. In general, the loss reaches $83,800 in repairs, restorations and income.

"The farmer's trade is one of worth,
He's partner with the sky and earth,
He's partner with the sun and rain,
And no man loses by his gain.
And men may rise and men may fall,
The farmer he must feed them all."

The country prospers in porportion as the farmer prospers. The success of the farmer insures the success of the country.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

The rainfall to date at Riverside is 10.90.

Chino has received 18.74 inches of rain.

The large new creamery at Imperial is ready for business.

Five firms will together plant above 400 acres of grain in the Yucaipe.

The rainfall at Santa Paula is 18.95 for the season, against 4.87 for last season.

The season's rain-fall in Pomona amounts to 18.71 inches—almost nineteen inches.

The Glendora Farmers' Club will hold its regular meeting on Saturday, February 9th.

The fall for the last storm at Redlands amounted to .83 of an inch, mak- 14.32 inches for the season.

Dealers are now paying $10 and 11 per ton for hay the same price that prevailed through the summer and fall.

The rainfall of Tuesday and Wednesday amounted to .85 inches at San Jacinto bringing the total for the season up to 12.45 inches.

Grain seeding, in progress in the Yucaipe valley during the past 12 days has been the liveliest ever in the history of that section.

Several cantaloupe growers in the vicinity of Brawley are already planting seed, believing that they are going to have an unusually early season.

The ranchmen of the Coachella and Thermal districts are busily engaged in arranging for shook to make crates for shipping their onions and cabbage.

The rain man yesterday added more than half an inch to the San Bernardino valley's record bringing the total for the season up to 15.93, or practically 16 inches.

The people of Lemon have contracted with a Los Angeles cannery for the shipping of tomatoes. Nearly 200 acres have been signed for at a higher price than last year's contract.

The cabbage growers held a meeting at Coachella and while no positive arrangements were made, we understand that the California Vegetable Union will handle the crop.

Every possible precaution is being taken by the desert melon growers to guard against the aphis, from which the crop suffered considerable damage the latter part of the season last year.

The continued heavy rains are going to make the price of hay high this year, according to Redlands dealers. They assert that it has put planting so far back that the old crop will be entirely exhausted before the new comes on.

A number of Coachella ranchers are already breaking ground for the melon crop. While no accurate figures are obtainable as to the number of acres for this year, it is expected that a larger acreage than last year will be planted.

The Brawley Cantaloupe Growers' Association has over 600 acres of cantaloupes signed, and expect to have from 100 to 200 acres additional. It also has about 25 acres of tomatoes and several acres of cucumbers pledged.

All the lands of the Southern Pacific included in the government grant to the Central Pacific in this State, Nevada and Utah, with the exception of the timber property, will be placed on sale not later than July 1 this year.

The chief damage to the celery crop was produced by the overflow of the fields, where the waters rise high enough in the trenches to run over the tops of the banked plants. Where this happens there is danger of rotting at the tops of the plants and of "black heart."

It may be the Salton sea or it may be the tons of dynamite which are being fired daily that is causing the increased rainfall. Be that as it may the fact remains that the desert is experiencing a radical change in climatic conditions, a most unusual amount of rain falling this winter.

HORTICULTURE.

Rialto shipped three cars of oranges on the 1st.

Highland has shipped 170 cars of oranges to date.

There is a scarcity of citrus nursery stock all over Southern California.

Riverside has asked that March 1st be set aside as a national Orange Day.

The total planting of grapes about Imperial this year will probably reach 1500 acres.

Shay & Dairs are setting out 20 acres to berries and rhubarb at San Bernardino.

Orange county nurseries are practically exhausted of orange and lemon trees as are most other sections.

A message from Rialto says: "There will be but few oranges picked until the market becomes more favorable."

Car load after car load of grape cuttings are being brought in and planted in different portions of the desert.

The demand for orange trees for planting is unprecedented in this section, in fact, the demand is six times as great as the supply.—San Bernardino Sun.

The Azusa Foothill Citrus Company has increased its packinghouse floor space by about 25 per cent and doubled its capacity for handling and packing oranges.

If there were 2,000,000 more orange trees to be had in the south they would be snapped up quickly. Lemon trees are also in great demand, while the supply is limited.

The Orange County Horticultural Commissioners declare that no damage was done to the citrus fruit by the heavy frosts the first three days in December.

The Riverside Horticultural commissioners say that while the frosts were extraordinarily heavy the large quantity of moisture in the ground saved the fruit and trees from damage.

The Orange County Horticultural Commissioners will withdraw the county citrus-fruit fumigating outfits from service in the coming spring. Private parties have the field filled.

It has been proposed to send out parties of school children, say a hundred at a time, into the foothills around San Bernardino, on Saturdays during the coming months, each child to plant a tree.

W. W. Perkins of El Modena is digging roses for shipment East. This process is not done as might be supposed by spades but by plowing. "Cutting" is the proper term used. Mr. Perkins will pack the car at Orange. He has a force of twenty-five men helping him.

The new Tulare county ordinance prohibits the importing of all rooted vines into this county which are found to be infected with Anaheim, phylloxera or other diseases. The ordinance also gives power to the horticultural commissioners to destroy all parts of the shipments found to be affected.

The orange crop is fully as large as that of last year, but a considerable portion will be lost if warm weather continues, which will cause oranges to puff. The fruit runs the largest of any for many years, and is excellent in quality. At present, however, the market is shaky.

The Ojai olive crop is not a very heavy paying proposition this year. The fruit was sold to the American Olive Company on the trees. That company sent a crew of pickers to Nordhoff about three weeks ago; and on account of the rains, they are still here; and the crop, estimated at twenty-five tons, is not all picked.—The Ojai.

The first company organized for the manufacture of denaturized alcohol in San Bernardino county filed articles of incorporation with the county clerk this afternoon. The company's title is the California Vineyard & Improvement company, and the purpose of the organization is the manufacture of grape juice and denatured alcohol.

Northern California

AGRICULTURE.

There are 40,000 tons of beets about Salinas unharvested.

Hay is now at a premium as well as wood and coal. On the bay they are paying almost any price for any kind of hay.

Yolo county farmers in anticipation of the erection of a sugar factory, have pledged over 300 acres to the planting of sugar beets.

The stockholders of Tulare Coöperative Creamery Company held their annual meeting Friday afternoon, in the City Hall at Tulare, to hear reports and elect their board of directors.

At a meeting of the Board of Directors of the State Agricultural Society held on Saturday, January 12th, it was decided to hold the next State Fair from the 7th to the 14th fo September, inclusive.

The River and Harbor Bill carrying an appropriation of $50,000 for the Sacramento River, constructing jetties, dredging, etc., to improve the navigability of the stream, has been passed at Washington.

The Irrigated Land Company has purchased 1302 acres of choice land adjoining the town of Gridley. The land will be divided into small tracts, and there are already purchasers on the ground to occupy it.

A force of seven United States livestock inspectors, who are connected with the Bureau of Animal Industry, arrived in Red Bluff Saturday for the purpose of making a general survey of sheep conditions in the county.

Among the interesting subjects discussed at the Wheatland farmer's institute may be mentioned, "Summer Fallowing, Farm Wastes, Alfalfa culture, the Dairy Herd, Orchard Topics, Will Pumping for Irrigation pay?"

It is in all probability likely that at the meeting of Sonoma County Pomona Grange in this city on February 16, that Prof. Wickson of the University will deliver one of his popular lecture.—Healdsburg Enterprise.

Senator Boyton's bill asks for an appropriation of $200,000 or more for the erection of buildings, improvements, purchase of furniture, supplies, machinery and live stock, and for paying the operating expenses of the University Farm at Davisville

J. C. Henshaw, who is operating the Drake ranch on Sandy Gulch near Chico, has after careful examination become convinced that rice can be successfully cultivated in this county, provided that sufficient acreage can be secured to justify the required irrigation.

The American Beet Sugar Company grows at Chino about 1000 acres of beets for itself. Other farmers grow here 600 to 800 acres; the remainer of the immense consumption of near 100,00 tons of beets is grown elsewhere—chiefly near the sea. Although about 10,000 acres of beets are grown for the factory here.

We understand that several of the orchardists in the vicinity of Tulare, are preparing to plant peach trees this season. One year with another, the peach has proven a good money-maker, even orchards on low ground where frost occasionally does considerable damage to the crop having been profitable.

United States Attorney Devlin has received information that the railroad companies of Northern California have been keeping cattle on cars without food or water for fifty-six hours. As soon as sufficient evidence has been collected, civil suits will be instituted. The longest period that cattle can be kept on cars is thirty-six hours.

The situation of the beet growers in the Salinas valley who had not got their crops delivered was growing much better last week, and hauling to the factory would have begun again on Monday had not the last three-quarters of an inch of rain made all the roads tributary to the main roads wholly impassable and the fields again bogs of mire.

HORTICULTURE.

Total rain to date at Visalia is 9.34. At this date last year it had rained 5.96.

Exter to date has had 9.66 inches of rain, but points nearer the foothills have received more.

The rainfall in San Lucas to date is 13.36 inches, which is more than double the amount of last season at same date.

The Petaluma county fair, planned for August of the present year, will lay over anything seen in that line for many years.

A large party of legislators visited the Kearney estate at Fresno, on the 2nd, to see what this fine gift to the State consisted of.

C. C. Donovan of Healdsburg, has purchased one hundred and twenty-five bales of hops. The grower receiving 11½ cents for his crop.

The citrus fair under the auspices of the Cloverdale Co-operative Citrus Association, will open in Cloverdale Tuesday evening, February 19.

During the few days last past three carloads of apples have been shipped from Watsonville. The total shipments for the season to date amount to 1793.

The output of butter at the Watsonville creamery at the present time amounts to about 350 pounds daily, but a material increase is expected when weather conditions improve.

The highest amount per acre realized by an orchardist in Solano county, is in the case of Louis Oberti, who runs a cherry orchard of three acres, near Suisun. The sales from this three-acre orchard netted $3000, being $1000 per acre.

At this writing rain in unusual quantities is falling quite generally over Northern California, and all reports in these columns will receive a considerable addition. In many sections all rain records to date will have been broken.

A large tract of land in Siskiyou and Shasta counties, sold by the Five States Lumber company and W. E. McCord, comprises 10,000 acres and lies on both sides of the county line east of the Sacramento river in the vicinity of Castle Crag and Dunsmuir.

Over an inch of rain fell in Redding during the twenty-four hours ending at 7 o'clock Monday morning. The exact precipitation was 1.09 inches. This brings the season's precipitation up to 19.21 inches, as compared with 15.23 inches at an even date last season.

A dispatch from Sonoma on February 3rd says: The rainfall here the past twenty-four hours was unprecedented. The precipitation last night was three inches. Sonoma Creek and all its tributaries broke over their bank and inundated all the extreme southern part of the valley.

The committee on fruit and vine interests in the State Legislature recommended the passage of Senator Black's bill making it a misdemeanor punishable by a fine of $50 to $500 to sell trees under false names. The proposed law is intended to prohibit fraud and misrepresentation in the sale of fruit trees. Prosecution may begin any time within five years.

The largest cherry orchard in Solano county is that of Fred J. Jones, in Green valley. The orchard comprises 152 acres, 125 of which are in cherries, twenty-one acres in peaches and six in almonds. Of the 125 acres in cherries, thirty acres are in bearing, comprising several varieties. The gross sale from cherries grown on this thirty acres last year amounted to $27,000.

Potato dealers in Stockton say that is would not suprise them if the price of spuds per sack on the bank would reach the $3 mark within the very near future. Owing to the congested condition of transportation the arrivals from Oregon and Eastern markets are very light and the local growers in the absence of foreign shipments are practically in a position to dictate the terms.

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

Buy the World's Famous Egg Food No. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for greatest batch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be isued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. FILCHER, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

Petaluma Incubator Co.

Main Offices and Factory, Petaluma, Cal., Box F.
Los Angeles, 505 South Main Street.
San Francisco Office and Salesroom, 33 Market St.

Beef Scraps Raw Bone

GUARANTEED ANALYSIS :		GUARANTEED ANALYSIS :	
Protein	**65%**	**Protein**	**25%**
Fat	**8%**	**Phosphates**	**45%**

Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in these Beef Scraps.

Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods

WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

WHITE MINORCAS

Won at Alameda Poultry Association Show, 1907: 1st Cock, 1st Hen, 1st Pullet

EGGS FOR SALE—$2.50 per Setting of 15; Two Settings, $4.50; Incubator Lots $10 per 100.

A Few Cockerels For Sale. Prices on application to

Coulson Poultry and Stock Food Company
Petaluma, California

S. C. White Leghorn Eggs

For Hatching, from Captain Mitchell's Strain.
Large Birds. Prolific Layers. Large White Eggs.
Order Books Open for 1907 Season.

The Lincoln Avenue Poultry Yards

Carl C. Curtis, Owner, Pasadena, Cal.
Successor to Captain E. Pryce Mitchell

Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

FEEDING LAYING HENS.

THE FOLLOWING thoughtful and suggestive letter from a subscriber calls for more than a passing answer, for the consideration of it may help many.

"Dear Madam:—The dry feeding formula as given out by the Maine Experiment Station includes one-seventh of gluten meal, and one-seventh of linseed meal.

"Taking our climate into account, do these not form a too fattening proportion of food for fowls, especially for the American breeds in confined spaces?

"Would it be a matter of interest to your readers if you could kindly elicit from reliable breeders, the monthly returns during the course of one year, of eggs laid by each of the leading varieties of poultry? Say from a pen of so many birds, stating age and variety, etc., quality and quantity of food supplied, etc."

In the October numbers of the Cultivator there was a synopsis of the experiments of the Maine Experiment Station with laying hens, experiments in selecting by means of trap nests, and experiments in feeding for producing eggs. These experiments are both interesting and instructive, and in the bulletin referred to by our correspondent, we learn hod they feed the young chicks (on dry food;) how they select and feed the pullets; how they trap-nest them and choose only the best layers for their breeders; and how they finally have succeeded in getting a marvelous increase in the number of eggs laid.

The formula to which our subscriber refers is the dry feed, which is kept always before the fowls in a feed trough with slatted front.

This dry meal mixture is composed of the following:—200 pounds of good wheat bran; 100 pounds of corn meal; 100 pounds of middlings; 100 pounds gluten meal—or brewer's grain; 100 pounds linseed meal, and 100 pounds beef scraps.

These materials are spread on the floor in layers one above another and shoveled together until thoroughly mixed, then kept in stock. The trough is never allowed to remain empty; the dry meal mixture is constantly within reach of all the birds and they help themselves at will.

Health of Fowl.

When I am asked questions about fowls, their health, etc., I usually interrogate Nature to find a suitable reply. When a question comes about feeding or the value of foods, not being an analyst myself, I interrogate Prof. Jaffa, or rather refer to his bulletin 164 on poultry foods. I find by this that the Maine formula has a nutritive ratio of about 1:4.6. I think our subscriber is quite correct in suggesting that this is too wide a ration for this climate, especially for Plymouth Rocks, and that by omitting both the gluten meal and the linseed meal, he would have a much better ration for this warmer climate. This omission would give a ratio of 1:3.9, which would be a very satisfactory ration for Rocks. In the matter of feeding of the different breeds, there is a good deal to be considered. The lighter and more active breeds, such as the Leghorns, require a more heat-giving food; a food that will supply them with the heat and energy necessary to their active habits; and by having this wider ration, they will be enabled to lay more eggs and do better than if kept on a less carbonaceous diet. The Rocks and Wyandottes, on the contrary, if fed the more fattening or narrower ration, instead of growing more active, putting on more energy in the way of laying eggs, turn it into fat, consequently they demand a narrower ration. In other words, less fattening food and more protein; less corn, gluten meal or linseed meal or any fattening meals, and more meat. This is really the only difference between the wide and narrow ration. The narrow has more meat, the wide more corn or fattening food.

Roughness.

There is one thing that some breeders over look, and that is the necessity of supplying a certain amount of "roughness" in the food. Farmers understand that their cows and their horses need this roughness and give it to them in the shape of hay, or other coarse fodder. With fowls we find that the best roughness is green food, alfalfa hay, or even straw, if nothing better can be had. There is a certain amount of fiber in the grains, but it is not sufficient to supply the necessary roughness, or filling food. This latter is by far the least expensive and it is therefore extravagant and unwise of the farmer not to supply this need. It is surprising how much hay or straw, out of the scratching pen, the hen will eat. I found mine required at least a leaf of hay every week in their pen. This they scratched and broke into small pieces and ate it, although they had plenty of grain ground fine, or scattered in the straw always before them; they seem to understand the need of this roughness. While the Maine Experiment Station's formula is excellent, as the results prove, in the Maine climate, I think, with our subscriber, that a better formula can be made for our own climatic conditions from the grains, mill stuffs and by-products of California as given in Prof. Jaffa's very valuable bulletin, (Farmers bulletin, 164) on Poultry feeding. This contains an analysis of all of the Pacific Coast foods and of the proprietary foods in common use here, and by studying this analysis and the eight formulas given foods can be so mixed as to give a properly balanced ration of the cheapest local raw materials.

Study Feeding.

By studying poultry feeding, in fact the whole poultry business, as you would any other enterprise in which you risk time and money it can be made profitable. I think it might be both interesting and profitable to our readers if some of the reliable poultry breeders would give us their monthly returns of eggs laid by each of the leading varieties of poultry.

Last week I visited some poultry ranches near Los Angeles, and found on one that every egg that had been laid during the last three years had been carefully counted and a perfectly systematic record kept of the expenses, losses, gains, eggs and chickens sold and the different prices received each year or season. Such a system of bookkeeping showed careful thought and study, and consequently success in the poultry business. These friends of mine (a professional man, wife and two sons) came as novices in the business, bought a farm,

or rather 20 acres of land, built a house and chicken coops, started into the business. From the first they have made a success of it, by sheer hard work and study. It is a business of ups and downs and in order to be successful one must stick to it unmindful of discouragements. This they did, and though greatly discouraged, one year by roup which attacked their flock, they have, by proper housing, (they use the mushroom houses) and perfect ventilatation, feeding clean grain and properly balaneed ration, overcome all their troubles and are now prosperous poultry breeders, with a ready sale for all their products. Truly it would be hard to find any occupation offering more inducements for the amount of money invested, than the poultry business if rightly conducted.

CHICKEN HATCHING.

The incubator plays a most useful part nowadays in the hatching of chickens, but by far the greater number, after all is said and done, chip their shells through the good offices of mother hens. For those who prefer the old method, and particularly those who are just thinking of starting to keep poultry, the following remarks may be useful, and there is plenty of

Single Comb Brown Leghorns

time to study them, and so be prepared, before next hatching season.

To hatch the largest possible number of chickens from any setting, follow natural methods as closely as possible. When a hen sets herself away in some sheltered corner, and is not interfered with further than providing her with a sufficient supply of food, she usually hatches every fertile egg, or almost every one. An examination of the nest she has made for herself—say among the long grass, under the shelter of a hedge, and its surroundings—will convey much information as to how the artifical article should be got up.

How many eggs should be given to a hen to hatch? It depends upon the size of the hen, the size of the eggs, and also upon the season of the year. In the very early part of the year, when winter is severe, it is always better to give her a moderate number of eggs, so that she will be able to cover and protect all the chickens nicely which she may hatch. Nine chickens are about enough for a hen to do full justice to during cold weather—that is, if she is a hen of good size; a small bird will do better with rather less. As the season advances she may have a dozen or thirteen, if she can manage to bring as many out of the eggs given her.

It is very desirable to get a hen with keen setting propensities, when her incubating offices are required, particulary if she has to be brought from a distance. The latter condition often upsets the broody instinct of many birds, the strangeness of the new surroundings making her forget everything else. It is very provoking to find that a hen has left her nest after being intrusted with valuable eggs. These are mostly birds with a certain proportion of non-setting blood in them, such as half-bred Minorcas, Leghorns, Anconas, etc. Since the Buff Orpington became fashionable, good seters in the early part of the year have not been so scarce, and such birds, when they once go broody, can usually be depended upon to do their duty throughout. Buff Orpingtons crossed with any other setting breed are also excellent, and the same may be said of Black Orpingtons, Plymouth Rocks, Wyandottes, Indian Game and Dorkings, either pure or crossed with each other, are also very reliable.

LEGHORNS VS. MONGRELS.

The West Virginia Experiment Station reports the following summary of an interesting experiment:

Fifty White Leghorns were compared with fifty mongrels for one year as to the cost of food and egg production, ordinary care and attention being given them, such as they would receive on the average farm.

In addition to skim milk used to moisten the mash, the Leghorns consumed 61 pounds of food, costing 85.3 cents, and the mongrels consumed 66.8 pounds of the same materials, costing 92.1 cents.

During the year the Leghorns laid 116.5 eggs, worth $2.24 per hen, and the mongrels 96.1 eggs, worth $1.78 per hen.

The Leghorns gave a profit over the cost of food of $1.39, and the mongrels a profit of 68 cents.

The mongrels gained in weight one pound per head more than the Leghorns. If this increase in weight is taken into consideration, then the Leghorns gave a profit of forty cents per hen more than the mongrels.

The highest prices for fresh eggs usually prevail during the months of November, December, January and February. During these four months the mongrels laid only 364 eggs, and the Leghorns 1029, or practically three times as many.

In nine cases out of ten failures in the poultry business is due to carelessness on the part of the care-takers. How many people neglect giving their fowls sufficient water have no regular hours for feeding, and keep them starving for hours in the morning, especially if the weather is stormy. Yet they expect the hens to lay the same as if they were well taken care of.

Scientists believe that the Eiffel Tower, Paris acts as a lightning rod to protect the city.

Emery's Pure Meat Meal

Ask nearest dealer for them, and take no imitations
Write for our free booklet, "Farmers Friend"
Valuable to all farmers and ranchers,

Don't believe all we say, but just enough to buy our Poultry Foods.

Emery's "B. B. & B."

The Pacific Guano and Fertilizer Co. ***San Francisco***
Successors to M. Ohlandt & Co.

El Oro Poultry Farm

Produces birds which show their worth as layers and as

Winners of Ribbons

At the Fresno Show this year they won:

Brown Leghorns—1st Cock, 1st Cockerel, 1st and 2nd Hen, 1st and 2nd Pullet. 1st Pen.

Buff Rocks—3rd Cockerel, 4th Hen.

Black Minorcas—1st and 2nd Cock, 2nd and 4th Hen.

Buff Cochin Bantams—1st Hen, 1st Cock.

Blue Andalusians—1st Pen, 1st, 2nd, 3rd and 4th Hen, 1st Cock, 1st and 2nd Cockerel, 1st Pullet.

Bronze Turkeys—4th Hen, 4th Gobbler.

Buff Orpingtons—3rd Cock, 5th Hen, 4th Pullet.

Besides these, El Oro Birds won the Bankers' Cup for the greatest number of points of any one breeder, with 66 points; Special for Best Mediterraneans. Besides that, in another special these birds literally

Took the Cake

Eggs, $1 to $3 per Setting. Stock, $1 to $5 Each

El Oro Poultry Farm Fresno California

BEMIS BARRED AND WHITE PLYMOUTH ROCKS

PRIZES WON At Alameda County Poultry Association Show, Oakland:

21 Regular Prizes.
4 out of the 5 Specials given by the American White Plymouth Rock Club.
Silver Cup for the ***best collection*** in American Class.
Silver Cup for ***best display*** in American Class.
Hines Silver Cup for 10 Best White Plymouth Rocks in Show.

I am able to ***furnish*** the ***best*** birds and eggs at moderate prices. I cannot furnish large lots for incubators.

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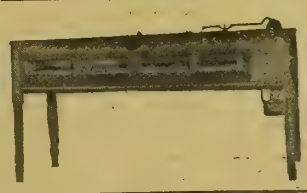

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They Are the Best on Earth
Principal Incubator Co., Graton, Cal.
Send for New Price List

The White Faced Black Spanish

Are famous as layers of large white eggs at all seasons of the year. We won all prizes at the Breeders Great Show, 1907. Choice Cockerels For Sale, $5. Eggs, $1.50 per 13, $4 50 per 50, $8 per 100. Special matings, $3 per 13. Fertility guaranteed.

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1907 Model

The Stockton Incubator

Is now manufactured under new management and is in every way put up as a first-class machine. Our 1907 model is a perfect working incubator, low in price, economical to run and gives a fine hatch.

Winner of silver medal at Pan-American, also medal at California State Fair. Write for circular and information.

Stockton Incubator Company
G. S. Marshall, Prop. ***Stockton, Cal***

Mission View Poultry Ranch

WHITE WYANDOTTE WINNINGS, 1906

Four Firsts out of 5; 3 Special Ribbons out of 4 and Silver Cup, the specials being given by the National White Wyandotte Club. Won all prizes on Hens but one and all Pullet prizes were won by my stock, one of my customers winning two Cockerels, 1st and 3rd, Cocks 2nd and 5th, Pens 1st, 4th and 5th. **Mammoth Bronze Turkeys and Buff Cochin Bantams, Silver Laced Wyandottes and Lakenvelders** For Sale Cheap. Address

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The "Chatham" Incubators and Brooders

are sold on their merits only—you be the judge

84 days free trial Take off 4 hatches to prove that the Chatham is the machine you want, then if not satisfactory it costs you nothing.

I want every reader to send for my free catalogue, telling all about this machine, and why "Women Succeed," "Profits in Poultry," "Broiler Raising," "Ducks for Market," "Which Hens to Keep," "About Turkeys," "To the Farmers," — a book of good useful information, and practical. Send a postal card with your name and address and this book will be mailed you free.

GEO. W. FOOTT,
321 East Morrison St. Portland, Oregon

Spargur's Trap-Nested White Leghorns

Eggs from 200-Egg Hens, $1.50 per 15, $6.00 per 100
From Second Best Pens, $1.00 per 15, $5.00 per 100
Indian Runner Duck Eggs $1.00 per 13, $5.00 per 100
Blue Andalusian Eggs, $2.00 per 15, prize winning birds

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Ross & Tate, Altadena, California

Breeders and Importers of
Buff, Black, and White Orpingtons

Have for sale Trios, Cockerels and Pullets. Eggs for hatching, settings or hundreds. Write or call,

Two Blocks North, One Block East Altadena Post Office

Prize Winning White P. Rocks

Won 1st on cock, 1st on pullet, special for best pair, Petaluma Incubator for best pair in American class at Los Angeles show, 1907, the largest ever held west of Chicago. Stock and eggs for sale.

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"Oakhurst" R. D. 1 Hollywood, Cal.

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Engineers, Experts and Agricultural Experiment Stations Use and Recommend
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Our 244 page Book, "How To Make Money With Poultry," contains more information than any other. FREE by sending addresses of two friends who keep poultry.
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C. J. Ferris

BREEDER OF THE FAMOUS
Buff Plymouth Rocks

Winners of Five Prizes at the late Los Angeles show, the largest show ever held on the coast A few choice cockerels for sale. Eggs, $2 and $3 per 13. Write your wants.

San Gabriel, California

MY EXHIBIT OF
WHITE, PARTRIDGE AND BUFF
WYANDOTTES

Won 26 Ribbons and Special Prizes at the Poultry Breeders' Show, 1907

L. E. Berkey
R. F. D., Box D87 Fullerton, Cal.

The Celebrated
BASLEY STRAIN OF WHITE P. ROCKS...

have some extra good pullets for sale that cannot fail to please, at reasonable prices. Eggs $2.00 per 15, $8.00 per 100.

F. A. Holbrook, Santa Ana, Cal.

WHITE ROCKS

Fine large vigorous farm-raised stock. Bred for utility and fancy points. Eggs, 15 for $1.50, $6.00 per 100. Call and see our stock and you will leave your order, for that is the way that all lovers of Fine White Rocks do that come to the White Plymouth Rock Ranch. J. T. Davis, Prop., Pomona, Cal.

When writing advertisers mention Cultivator

WINTER MANAGEMENT.

Fowls that do not lay well in the winter and that are fed considerable fattening food are very apt to become over fat. Fowls that are too fat lay but few eggs because they accumulate an excess of internal fat. It increases often to the point of causing the hens to drop from the roost at night dead from apoplexy. The way to prevent this is to feed only small grain, and keep them continually busy hunting and digging for their grain food. This gives them plenty of exercise, helps to use up in energy the surplus food that might otherwise be turned into fat, and the continued exercise lends its influence and increases the egg yield. A proper grain ration, properly fed so as to continue the daily hard work in digging and scratching as exercise, has quite as much to do in the egg production as has any other one condition in the caring for poultry.

The hens that are likely to produce a profitable egg yield during the winter months should be in prime condition for laying by the first of December. Hens and pullets that are not in good laying condition by that time are not likely to be of much service for several months in egg production. If cold strikes the hen that has not finished her moult and gained a healthful, vigorous condition, the demands of her system will use up about all that there will be of advantage in the food that is given her, leaving but little to be turned into the formation of eggs. For this reason we have continually advised that manner of care for poultry which will bring them into the best possible condition for egg production before winter sets in. The hen is like the cow—she can only do the best work when in the best possible condition for doing that which is demanded of her. An ill-fed, poorly cared for cow seldom pays expenses during winter at the pail, nor will a bad-conditioned hen give profitable returns at the egg-basket.

WHITE WYANDOTTE FARM.

The Cultivator is in receipt of a handsome booklet on White Wyandottes, issued by the White Wyandotte Farm, Inglewood. The book is printed on sepia paper, handsomely illustrated with half-tones, made direct from photos of their birds, houses and yards. In their yards are about 3000 birds, and they claim the most perfectly appointed poultry plant in California.

The founder, Anna L. Pinkerton, has been a breeder og Wyandottes for years, and her wide experience will serve her well in selecting and mating birds for her customers. The booklet will be sent free on application to readers of the Cultivator.

The Southern Pacific passenger department has just issued a little booklet entitled "California South of the Tehachepi." It contains many valuable and interesting reviews of the country written up, and is illustrated with half-tone views of almost every town included in the territory. It is very valuable as a guide to send East to friends. A copy may be obtained by writing Charles S. Fee, general passenger agent, San Francisco.

Special attention is called to the advertisment of the Principal Incubato Company, Graton, Sonoma County, California. The company make the claim that they are the "best on earth," and in any event it will pay intending purchasers to write them for their price list, and for any other information desired. This company are manufactures of not only incubators, but also brooders and dealers in poultry supplies and fixtures. They are building up a large business.

Piles Cured In 6 To 14 Days.

PAZO OINTMENT is guaranteed to cure any case of Itching, Blind, Bleeding or Protruding Piles in 6 to 14 days or money refunded. 50 cents.

Remains of irrigation systems 4000 years old, have been excavated in South Africa.

The Largest Poultry Supplies House in the United States

Peerless Chick Feed

Is the Cleanest and Purest Chick Food possible to produce and insures

Health and Rapid Growth in Baby Chicks

GRANULATED MILK—the Pure Protein Food

315 S. Main **HENRY ALBERS CO.** Los Angeles

FAILURE

EGG FOOD — A·C·W — IT FILLS THE BILL

to raise a large healthy flock of poultry lies in the care and food the chicks get in their early days. 75 per cent. of the death los in chicks comes from improper food. By actual experiments we found a combination of chick food that is so made that the young est and weakest chicks can eat and thrive on it. No BOWEL TROUBLE caused by indigestion and irritation of the immature organs if you feed A. C. W. Chick Food. Test this statement by using a sack; for sale at dealers. We have been in business here 14 years and deal in Poultry Food—not HOT AIR.

Agricultural Chemical Works
901-907 Macy St. - - Los Angeles, Cal.

Mfrs. of A. C. W. Egg and Chick Food and all raw materials for poultry food.

Chas. E. Smith Breeder of *Arrowhead Strain* of
Barred Plymouth Rocks

Won at Los Angeles Show, the largest ever held on the Coast, 225 Barred Rocks in class, as follows: 1st, 2nd and 5th Pens; 1st, 3rd, 4th and 5th Hens; 1st, 2nd 3rd and 4th Pullets; 2nd Cockerel. Barred Rock Club Cup for Best Display; Association Cup for Best Display, and Three Incubators, one for Best Pen in Show, all breeds competing.

Choice Stock for sale from same mating that I bred my prize winners from Prices reasonable. Eggs, ***$3*** and ***$5 per 15.***

Chas. E. Smith, Gardena, Cal.

Take San Pedro electric cars via Gardena to Smith's Crossing.

200-250 Egg Fowls | **WHITE WYANDOTTES** | Unsurpassed Show Record

Hatchable ***EGGS*** from ***mature,*** standard-bred, ***heavy laying*** fowls is our specialty. Clear eggs replaced. Eggs for ***settings,*** by the ***100*** or by the ***1000,*** from show matings and utility matings. ***Bargains*** in ***Stock.*** Write for our ***new*** catalogue.

CAPITOL AVENUE POULTRY FARM

A. L. R. MANTZ ***Rural 21, Box 98k*** ***SAN JOSE, CAL.***

Incubators? ***Baby Chicks?***

Must Hatch Incubators

Hatch all the fertile eggs and produce vigorous, healthy chicks—two factors that count in the poultry busiuess. We operate the most extensive manufacturing and poultry plant on the coast, and guarantee all our products. If you are in need of anything for the poultry business, write for our illustrated catalogue "B" We have the largest hatcheries in the world, and furnish the best S. C. White Leghorns it is possible to produce.

Order Early and Get the Desired Dating. MUST HATCH INCUBATOR CO. Petaluma, Cal.

BLACK MINORCAS
EXCLUSIVELY

Winnings at the great Los Angeles Show, January 1 to 5, 1907:

COCKS—First and Third. **COCKERELS**—First, Second and Third
HENS—First, Second, Third, Fourth, Fifth
PULLETS—First, Second, Third, Fourth, Fifth
PENS—First and Second
CUP for Best Minorca Male, also **PRESIDENT'S CUP**

EGGS FOR SALE

PERHAM & WHEELER

Successors to Geo. R. Albers — R. F. D. 123, Lordsburg, Cal.

1907—Los Angeles—1907

Seven Firsts, Ten Seconds, Five Thirds, Five Fourths, Five Fifths, Five National Club Special Ribbons, One Cup
Entries Thirty (30) Thirty Entries

The only breeders that won on White Rocks, Barred Rocks, White Wyandottes, Buff Leghorns and W. C. B. Polish. Showing that we have the best. Stock and Eggs for sale. Send for Circular.

Golden Crest Poultry Ranch *Randall & Robbins Proprietors* Box 412, Santa Ana, Cal.

FATTENING FOWLS FOR MARKET.

In fattening fowls on the farm for market the first thing to be considered is the place of confinement. The coops, if but a few are to be fattened, should be about 2 feet high, 1½ feet wide and as long as desired, divided into apartments holding 10 to 12 fowls. Or a corncrib can be used, if closed about 2 feet from the floor so that those inside can not see out and be disturbed by the fowls outside into a restlessness not conducive to rapid fattening.

When large numbers are to be fattened at one time coops are not practicable and the birds should be placed in small yards and kept as quiet as possible. This will necessitate those of the same flock and age being together so that fighting will be eliminated.

Do not attempt to fatten a diseased fowl, for the rest of the birds may become similarly affected. Look out for roup and indigestion. Be sure that the fowls are not lousy. Better dust with some good insecticide at the beginning of the process, for no bird can thrive and fatten rapidly if thus infected.

After the fowls are shut up begin to give the extra food gradually. If overfed at the start they "get off their feed," and every close observing, progressive farmer knows that it takes days for other farm animals to overcome such a difficulty, and it is the same with poultry.

The English, while giving us much credit for the number of eggs we produce, criticize the quality of the eggs and of the fowls that we call fat. This they attribute to our lack of knowledge of how to feed and fatten scientifically. They say our methods cause a layer of fat just under the skin, which is not desirable, for it cooks away and is useless. The proper method of feeding so incorporates the fat with the flesh that it makes an exceedingly palatable dish, juicy and tender instead of stringy and oily.

It is said that birds do not fatten so well if confined separately—except when the cramming process is used as they are apt to pine and mope, but being of greedy dispositions when they see others eating they instinctively hustle for their share. This proves a healthful stimulant to the appetite and more is eaten than wiuld be the case if each were penned alone.

Many formulas are given as to the amount and kind of food to be used, but here again good judgment and common sense are to be exercised, for locality, climate, breed, and prices of available food stuff must all be taken into consideration. And the knowledge of the relative values of food is quite indispensable. In our northern States corn is usually the cheapest fat-making food, so the more of it the fowls can be induced to eat the better. Two of the three meals each day should be corn meal mixed with milk and seasoned with a little salt. The noon meal may consist of whole corn and wheat with green vegetables and meat. The corn should be shelled and all of the food fed in troughs so that they will exercise as little as possible in obtaining it. Clean water sharp, gritty gravel and charcoal should be kept by them all the time.

In no case should food always be kept by them, but every fowl should have time and chance to eat his portion. After the first few days they should have all they will eat up clean in a short time, say an half hour.

Fowls will continue to improve just as long as they eat with a relish and this is usually about 3 weeks. Skillful feeders may sometimes shorten this process a little.

Another ration sometimes used, and claimed by those who use it to be the best yet is this: 100 pounds each of wheat bran, wheat middlings, buckwheat middlings and corn meal, and 10 pounds of powdered charcoal. If buckwheat is not obtainable twice the number of pounds of oatmeal from which the hulls have been sifted may be used, or ¾ the number of pounds of gluten meal may be substituted.

This should be well mixed while dry and at each mealtime enough for a feed should be stirred into a rather stiff batter with skim milk. If you haven't milk use 50 pounds of beef scraps in the mixture and stir up with water. If the milk is not sour allow the batter to ferment, but not become too sour. As fermentation is the first process of digestion this lessens the work of the digestive organs and more food can be consumed, thus shortening the fattening period. With this ration, grit, green food, charcoal and fresh water must not be omitted.

A mistake most farmers make is that of selling their poultry before fattening. Thin, scrawny birds of mixed breeds or of no breed at all never bring the top market price, whether sold alive or dressed.

MRS. CORA N. PORTER. (Iowa.)

STUNTED FOWLS.

It is held by many poultry raisers that fowls that are incubated as early as the latter part of June or the first of July never mature and make large vigorous fowls if permitted to remain out on range with the early broods. The results will be improved but very little if they are housed with fowls of all ages. If you are positive that you can give the latter broods attention at the first appearance of frost and continue to administer to their requirements throughout the winter late incubations wil pay, but not as large a profit as will the early broods, because the early broods are grown under natural while the late broods must be grown under artificial conditions. In my opinion those that incidentally have late chicks by reason of the hen stealing the nest or otherwise would find it safer to send them to market rather than to attempt to carry them over. Not one farmer in a hunderd ever meets with success in trying to raise late hatched chicks. Not because he hasn't sense enough, but because he already has a multitude of things on hand without looking after the wants of late chicks. In former years the farmer had some leisure moments in the fall, but of late it seems as if the fall is the busiest season of the year for him. Hence he who complains of stunted chicks can best be relieved by disposing of them early on the markets. It is a fact that we are living in the land of changes. If it were once profitable to the average farmer to raise late chicks, it is not so now. Those who do not conform to the times in which he lives will always be "lagging behind." No matter what his calling may be, every wide-awake American should study for improvement.

To Cure a Cold in One Day.

Take LAXATIVE BROMO Quinine Tablets. Druggists refund money if it fails to cure. E. W. GROVE'S signature is on each box. 25 cents.

McCullough Poultry Farm

OFFERS THE BEST IN

Barred Rocks

We have added to our own Prize Winning Birds, the entire stock, equipment and good will of S. M. Butler, the originator of the Arrowhead strain.

STOCK AND EGGS FOR SALE

WE HAVE COME TO STAY

H. T. McCullough, Prop., Box A171, West White Oak Ave., Monrovia, Cal.

Starbuck's Barred Plymouth Rocks

We Trap-Nest Our Hens. Bird Laying Qualities are inherited. Why set from poor layers? We use pedigreed cockerels whose mothers have for over six generations laid over 200 eggs per year. Eggs from old hens, $1.50 and $2.00 per setting of fifteen; from pullets $1.00 per setting of 15.

Wm. Starbuck - Fullerton, Cal.

Altadena Buff Orpingtons

N. HAYDEN & CO., BOX 1001, PASADENA

You can win with my stock and eggs because I have won and am winning. Matings this year very fine. Inspection invited. Write me your wants. **Eggs $2, $3 and $5 per 15.**

Osborne Harrows

A Line of Winners

OSBORNE
RIVAL DISC HARROWS
COLUMBIA DISC HARROWS
PEG TOOTH HARROWS
SPRING TOOTH HARROWS
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A Full and Complete Line of Standard and Reliable Goods.

Write Us for Catalogue of Farm Implements, Wagons & Vehicles

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133-153 Kansas St., San Francisco, Ca

Save Your Fruit From Frost

Be ready to meet the first cold snap and protect citrus fruit and vegetables from frost. You can be protected by using **Geo. Griffiths' Heat and Smudge Fuel** (patented). Not only crops saved but trees kept from injury. Others did it last year, you can do it this.

One grower saved thousands of dollars by using this fuel, while neighbors who did not use it lost crop and had trees badly injured. One ton per acre will answer for three nights' burning.

Order now and have fuel on ground for immediate use, if needed. Loose fuel in sacks $9 per ton f. o. b. Los Angeles; Briquettes, $12. Stoves good for 8 years, 50c each. No oil or kindling needed.

George Griffiths
1037 S. Broadway Los Angeles, Cal.

Egg Producers

Wright's Strain of Black Langshans

are acknowledged to be the best. At the last San Diego show twelve of our birds had an average score of 93 7-12, by Browning, an Eastern judge, winning five first, three second, and four special prizes. Among the latter was the Harry McIntire Asiatic Cup for best trio. No better egg-producing fowls known than my strain of Black Langshans. A few fine cockerels for sale $5.00 and up. Eggs $2.00 per 13. For particulars, circulars, etc., address

J. M. WRIGHT

Phone Main 1221 Pasadena 30 N. Broadway
Phone Main 8890 Los Angeles ***Pasadena, Cal.***

East San Gabriel Egg Ranch

S. C. WHITE LEGHORNS
BARRED P. ROCKS

Eggs for hatching $1 per 13 $5 per 100 We breed from two year old hens, and the best ones of the flock only. No stock for sale. Ranch two blocks south San Gabriel car line.

Swanson & Johnson ***San Gabriel, Cal.***

When writing advertisers mention Cultivator

Queries and Replies

Olives and Apricots.

Will you kindly tell me if growing olive trees from seed is preferable to growing them from cuttings? Should the pits be cracked before planting? At what season should they be planted and how deep should they be covered with earth?

Do peach trees budded on almond or on Myrobolan plum roots produce the same quality of fruit as when grown on peach root?

I have a number of eight-year-old apricot trees, thrifty and handsome to look at, but not one of them has ever, to my knowledge, produced an apricot. They always blossom moderately, but never set any fruit. I do not know the variety. Could you suggest any reason why they do not bear? They are on very good soil and since I have had the place (for the last three years) they have had careful pruning and attention.—J. B. M., Corning.

You cannot grow olives to advantage from seeds, they will not come true to the parent. You may grow seedling and bud or graft them, but the process is too slow.

Trees from cuttings come into bearing much sooner. Olive pits should be bedded down as soon as taken from the olive; plant them about an inch deep.

Peach trees or almond roots have a bad reputation in Southern California. They do not bear well. On plum roots, the trees are inferior. Peach root is the best and it pays to use it, even if you lose a year.

Your apricots must be Moorpark or some of the non-bearing varieties. There are a number of varieties that are fine to eat, but are absolutely barren in some places. Cut off the tops in July and bud the sprouts to some good variety or some good shipping plum like Wickson.—J. W. M.

Walnuts.

I have some 25 acres suitable for walnuts. Black sandy loam ten to twelve feet to water. Has been in alfalfa for twenty years; get from six to eight tons per acre per year.

Can irrigate from river five or six months during the year and do irrigate with flood water every year so no manure is needed. Feed to cows. I am realizing something like $100 per acre per year (gross.)

This land is nine miles from Escondido, thirty-five miles from San Diego; thirty from Ocean—to be plain, is in San Pasqual, and is 10 days or two weeks earlier than anything in county outside Imperial

This land is also suitable for berries.

Now I would like your advice. Would it be berries after awhile and alfalfa in mean time, or would you put in walnuts.—R. T., Escondido.

If walnuts have not been proven in your vicinity we would not advise planting largely, and it is quite likely that with land such as you have, a berry crop will bring more net revenue per acre, providing of course, that you have enough. If you have land and locality that will produce strawberries all winter you will find these to be an exceedingly profitable crop.

There will be a Farmers Institute held in Escondido in April next which you should attend, as the questions of soils and the crops most suitable for them will be discussed by one who has large experience in that line.

In case you conclude to plant some walnuts it will pay you to plant only budded trees and only those that are comparatively resistant to the blight.

Budding Over Almonds.

I have about a dozen large almond trees about eleven years old, they are about ten inches in diameter at the butt.

They are not of a very good variety.

Would it pay me to graft them, and if so, when should it be done.?

I would also like to know if a good silo could be a made by digging down into the hard pan where there is no water and either cementing the sides or leaving them bare?

If this kind of a silo would preserve the silage alright, about what diameter should it be made to feed five or six cows?—A. B. J., Escondido.

Do not attempt to graft over old orange trees, cut off the tops and bud into the sprouts during the summer while the sprouts are still growing.—J. W. M.

(Silo answer next week.—Editor.)

Grafting Walnuts.

I want a receipt for grafting wax, also when is the best time to graft the English walnut onto the Eastern black, and any more information you could give to help a greenhorn in the art. Hoping for an early reply in your columns. Subscriber.—Oxnard.

If you have young trees from last summer's planting of nuts, then graft them early in March. Keep your scions in sand that is just moist enough to prevent their shriveling, but keep your roots fresh. The grafting should be done just before the trees start to grow.

Dip your cloths in boiling beeswax, drain it from the cloth while it is boiling hot, allow to cool and tear in strips half an inch wide and wrap around the point of union of the graft. Better work can be done by digging up the trees and working with them on a bench. Pure beeswax is better than any mixture for this work.—J. W. M.

Cane Berries.

Will you tell me how to prune and care for Dewberries and, do you know any thing about the white raspberries and their value. Thanking you in advance for the information I remain, A. J. S., Buena Park.

Train the vines over a low frame made of wires stretched over cross

A Wide-Awake and Up-To-Date Seed House

We are now publishing our 14th Annual Catalogue. It is artfully designed; the style is new and original. The Cover Pages portray the busy scene at the Los Angeles market during the early morning hours. Every vegetable is illustrated and is described in Spanish as well as in English. Send your name and address asking for the catalogue.

SIGNAL HILL DEWBERRY—We are headquarters for plants. Price, per doz , $1.50; per 100, $10.00; per 1000, $50.00; 250 at 1000 rates.

We are Southern California Agents for

The Glendale Incubator Co.

a hot water machine, constructed along lines that are a working demonstration of the true way to apply the fundamental theory of artificial hatching.

We are also agents for the

Improved Pacific Incubators

and Combination Brooders

Write as soon as you can get a postal card for our catalog, telling you why you can't afford to be without our INCUBATORS and BROODERS.

JOHNSON & MUSSER SEED CO. 113 NORTH MAIN ST., LOS ANGELES, CAL.

CALIMYRNA FIGS

Our Great Specialty

The best for all commercial purposes. The Calimyrna is the genuine Smyrna fig of commerce and is a very profitable tree to plant. None genuine without our seal attached to each bundle of trees.

TREES

Of All Sorts True to Name

The largest and finest stock on the coast of strong, healthy trees.

Deciduous Fruit Trees

A very large assortment of all of the standard sorts.

Peaches, Plums, Prunes
Pears, Apples, Apricots
Cherries, Olives
Nectarines

All grown in a rich river bottom soil permitting the development of a most perfect root system.

Citrus Trees

From our Citrus nurseries in the great Thermal Belt near Exeter.

Grape Vines

on their own roots and grafted on Phylloxera resistant roots. All the leading table, wine and raisin sorts.

Burbank's Creations

Write for illustrated pamphlet about the four new and valuable Burbank creations; Santa Rosa Plum, Rutland Plumcot, Paradox and Royal Walnuts. We are the sole propagators and disseminators.

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Ornamental Trees and Shrubs
Roses, Palms
Greenhouse Plants
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Burbank's Crimson Winter Rhubarb, Etc.

NEW CATALOGUE superbly illustrated, contains much valuable information. Mailed FREE. Price list on application.

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Geo. C. Roeding Pres. & Mgr.
Box 14 Fresno, California, U.S.A.

When writing advertisers mention Cultivat

Columbian Wyandottes

Winners at Breeders Great Show, 1907

OCKS, 2nd, 3rd and 5th; HENS, 1st, 2nd, 5th; OCKERELS, 2nd, 4th and 5th; PULLET, 1st, id and 4th; PEN, 2nd. Club's Special Cup for est male and female; 5 Special Ribbons; also ecial Ribbon for best COLORED female; Ribbon r best shaped female. Stock and Eggs in any uantity. Eggs, $3 and $5 per 15, $20 per 100.

D. M. BURNELL, South Pasadena, Cal.

lack Tailed Japanese Bantams

Winners of 3 Silver Cups at late Los Angeles Show, also 1st Cock, 3rd and 4th Hen, 1st and 2nd Cockerel, 1st, 2nd, 3rd and 4th Pullets; 1st and 2nd Pen. Eggs for hatching, stock for sale

eRoy B. Burnell, South Pasadena, Cal.

ue Ridge Strain Blue Andalusians

We won more firsts in a class of 68 birds than all our competitors combined. Bred for utility and fancy purposes. Eggs, $2.50 and $5.00.

ue Ridge Poultry Yards *128 Avenue 32 Los Angeles*

). K. Trap Nests Shows the hen that lays the gs and keeps her from eating or breaking it ter it is laid.

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INDIAN RUNNER DUCKS

'inners at late Los Angeles Shows. White Minca and White Wyandotte eggs, 1st pen, $3; 2nd n, $2 per 15. Duck eggs, $2 per 13.

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BARRED PLYMOUTH ROCKS AND BRONZE TURKEYS.

Win once again at the great Los Angeles unty Poultry Association show 1907. For ll account of winnings, for choice stock or gs and a square deal write to

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They are vigorous and healthy and great producers of large white eggs. They have good size, rich yellow legs and bills. Eggs from special mated pens, $1 per 15, $5 per 100

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Eggs of Both Varieties from High Scorers and Great Layers.

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2d Prize Cock For Sale A close 2d to my 1st cock. Sire of 1st and 4th cockerels at late Breeder's Show. Write for particulars. Stock and eggs on hand.

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Pullets and Cockerels.

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Pure bred breeding geese **$4. to $6.** per pair. Also eggs **15c.** each

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pieces nailed to short posts, so that the wires will not be over 18 inches above the ground. Allow the young growth that comes in the spring, grow flat on the ground, but train them to grow length-wise with the rows to keep them out of the way when the crop is gathered, cut out the old tops and in the fall train the new canes over the wires.

Of course, water must be given them as frequently as they require it. Plenty of stable manure will give them a good growth and fine fruit. The white raspberry is of no value compared with Cuthbert.

Homer Pigeons.

Will you kindly tell me through the columns of the Cultivator, what kind of pigeons are the best to raise, that is what kind would be the most profitable to raise on a large grain ranch?—N. R., Moorpark.

Homers are the best commercial pigeons. They are larger than the common pigeons, very healthy. They have large squabs, that bring 50 cents a dozen more than the smaller and when once they have had a nest at any place they remain there. They have more squabs in a year than the fancy pigeons. Any other information I will be glad to give.—Mrs. A. B.

Toulouse Geese.

Will you please tell me the price of Toulouse geese for breeding purposes and also what is the price of eggs.—Mrs. C., Sebastopol.

The price of Toulouse geese for breeding is from $5.00 to $10 per pair, according to quality and size.—Eggs are usually 25 cents each.—Mrs. A. B.

New Muskmelon.

We have received over 100 letters of inquiry concerning the source of supply of seed of the new muskmelon illustrated on our front page, issue of January. There appears an advertisement of the same in this issue and we refer all inquiries to the same, for the correspondence is quite burdensome.

Puffy Oranges.

If Mediterranean Sweets start to puff can it be benefited by subsoil or in what way can it be stopped.—H. R.

It has never been our good fortune to know or find any person who did know how to prevent puffing of oranges, or ever knew the cause of it.—J. W. M.

Land Plaster.

Please tell me if any one in Los Angeles handles land plaster and if it is good for our soils.— E. T. B., Orange.

The Agricultural Chemical Works of Los Angeles, whose ad appears in the Cultivator, informs us by phone that they have several tons of land plaster on hand. It is good for sour or alkaline soils.

Grafting Prune on Olive.

Will you kindly inform me, if it is possible to successfully graft the prune into the olive stock.—C. M. C., Vacaville.

It is not.

More than Anybody Asks.

The great lamp-chimney maker of world, Macbeth of Pittsburgh, not only makes the best chimneys, but prints a most useful Index to lamps and burners; from which one can find out what shape and size to get for his particular lamp.

One is no longer dependent on grocers etc., for the somewhat delicate service of fitting his lamp.

Orange growers and shippers in Riverside both agree that there is much less black scale than usual this winter.

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That good soil means good crops

That irrigation is an asset anywhere

That wheat and beets are winners

That Alberta is THE place NOW

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Best on the Coast—best anywhere. Made right—prices right. Guaranteed. Catalogue free. Also great **Combination Brooder**. It is great—both indoors and out. When the chicks are hatched feed them the celebrated

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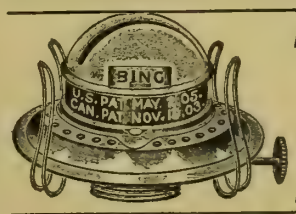

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Get a ***Twentieth Century Wonder,*** which will increase your light ***one-third*** from the same amount of oil, giving a light similar to gas or electric.

The Bing Glass Cone Lamp Burner

Is what does it. Fits common lamps. Send 25 cents and dealer's name for No. 1 or No. 2 size to the

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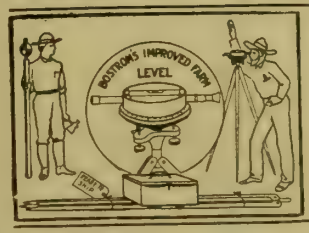

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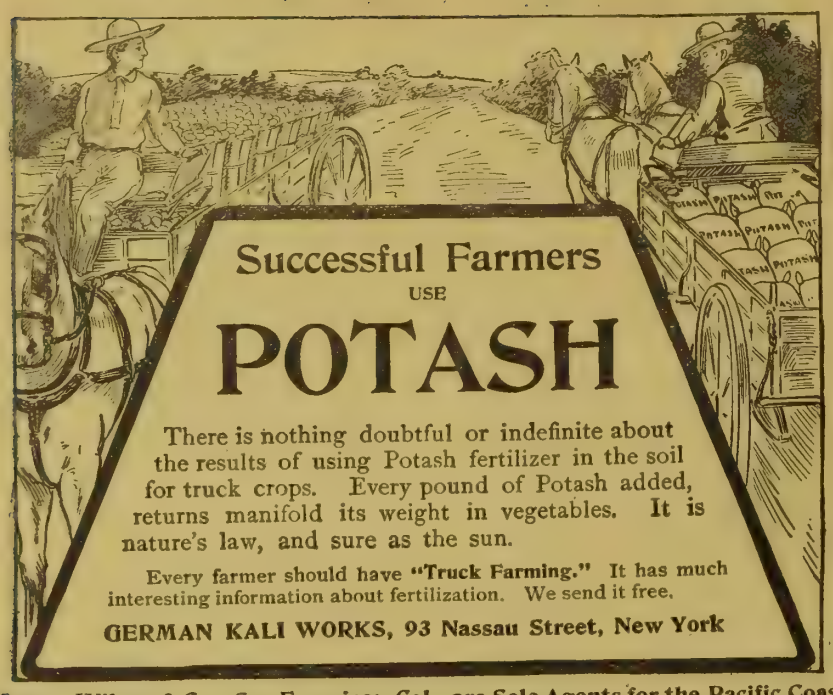

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from the best UTAH alfalfa section—clean and free from dodder and weed seeds. Also TURKESTAN alfalfa—recommended by the U. S. Department of Agriculture for dry land. Samples and prices of both, on request. If interested in CLOVER and GRASS SEEDS, and ONION SETS, write us.

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A gas machine for the country home. By its use you can have a bright light in every room. The SUPERIOR is absolutely perfect in its mechanism and operation. It can be placed in any home, whether old or new, at small cost. Tell us the number of lights you use and we will give you full particulars as to size of generator required and the cost of installing it. The information will not cost you a cent. We have this machine in use all over the coast and likely some one near you is using a SUPERIOR. Ask us about it. The Superior Generator is the result of long study and experience. We have improved it from year to year and now have a machine that is absolutely perfect in every way. Our catalogue illustrates all parts of the Generator. Sent free.

Superior Light and Heat Co.
151 No. Clarence St., Los Angeles

General Agriculture

FERTILIZERS FOR WHEAT.

TESTS conducted at different places for a number of years past have shown that it will usually pay well to use fertilizer on wheat.

While different soils, or even the same soil under different methods of treatment, require somewhat different fertilizers and about the only sure way of determining the exact needs of a particular soil is by the trial of a series of fertilizer tests on the same, it may be said in a general way that wheat soils are usually benefitted by all three of the essential fertilizing elements, viz., nitrogen, phosphoric acid and potash. Of these three elements phosphoric acid is usually needed in largest amount.

A fertilizer containing about 2 per cent. of nitrogen, 8 per cent. phosphoric acid, and 2 per cent. potash will produce profitable results in most cases and is very commonly employed. If used in addition to a heavy crop of clover, the percentage of nitrogen may be reduced but if used on land that has not been manured or clovered for several years the percentage of nitrogen can probably be increased somewhat with profit. Legume crops should, however, be used to supply nitrogen whenever possible, as they afford far the cheapest source of this element.

On some of the wheat soils experience has shown that somewhat more than 2 per cent. of potash can be used with profit, but on most of the yellow or red clays this amount should be sufficient.

A fertilizer of the 2-8-2 composition may be purchased ready mixed or it may be compounded at home from the raw materials. If mixed at home the nitrogen may be secured in the form of bone, tankage, nitrate of soda or dried blood. The phosphoric acid may be derived from acid phosphate or bone. Raw rock phosphate or "floats" is not recommended as a source of phosphoric acid in wheat fertilizers, as tests have shown that this material is not sufficiently available to produce satisfactory results in a single season. Potash may be derived from either the muriate, the sulphate, or kainit.

A good wheat fertilizer having the nitrogen, phosphoric acid, and potash in about the same proportion as in the 2-8-2- formula can be made by mixing:

Sodium nitrate, 14 to 16 per cent. N,	11 parts
Steamed bone, 1 to 2 per cent. N, 20 to 30 per cent. P O	15 parts
Acid phosphate, 14 to 16 per cent. available P O	30 parts
Sulphate or muriate of potash, 48 to 50 per cent. K O	4 parts
Total	60 parts

We believe that such a formula can profitably be used on soils of low and medium fertility at the rate of 180 pounds per acre, which would be equal to 300 pounds of the 2-8-2 formula. This amount would cost, for the materials contained, about $2.40. Our observation has led us to believe that too small an amount of fertilizer is usually applied to the wheat crop to produce the most profitable results.

Fertilizer is best applied to wheat at seeding time by means of a fertilizer attachment to the drill.

One of the best fertilizers for wheat, or most other crops, is barn-yard manure, but unfortunately most farmers are unable to make enough manure to cover their land and must resort to the use of commercial fertilizer. Manure alone, however, is not a well balanced fertilizer, as it is deficient in phosphoric acid. In order to increase the amount of this material it is excellent practice to add about 4 pounds of acid phosphate to each ton of manure as the same is being made. This not only results in increasing the phosphorous content, but also in preventing the loss of nitrogen. Manure will not only produce excellent results on wheat and other crops, but is also one of the best known means of insuring a catch of clover.

The best result from fertilizer can only be secured when the same is used in connection with proper preparation of the soil, good drainage good seed, etc. One need not expect the fertilizer to take the place of such necessary conditions any more than good tillage, etc., can be expected to take the place of the plant food necessary to produce the crop. It has been repeatedly observed, however, that liberal fertilization will tend to counteract the bad effects of unfavorable seasons, insect ravages, etc., by causing the production of strong plants better able to withstand such adverse conditions.

No danger of injury to the land from the use of fertilizer need be feared if clover or other fertilizing crops are used in the rotation to keep the ground loose and in good condition. If fertilizer is used constantly without such crops the ground may become hard and compact, due to the absence of organic matter— Arthur Goss, Indiana Experiment Station.

CORN GROWING EXPERIMENTS

In 1904, the Ohio State University undertook a comprehensive investigation regarding the relation of plowing at different seasons to the corn crop obtained, and many of the conclusions reached are of interst to the California farmer.

The object of this investigation was to determine the innuence of early and late spring plowing upon crop production. The study was carried along the lines of soil moisture, available nitrogen and soil temperature. The results found show:

1. The crop yield from the early plowed land is more than that from the late, at the rate of 6.6 bushels per acre.

2. That there is a very strong concordance between the yield per acre and by plots, and the amount of moisture per cent. and available nitrogen found in the soil during the season.

3. That the moisture-holding power of soils is greater with the early-plowed land at one, two and three feet in depth than that of the late, the greatest difference in its favor being found in the surface foot.

4. That when the moisture content of this particular soil falls below 7 per cent., the leaves of many plants curl early in the day, and the plant turns a yellowish color and is more or less checked in its growth.

5. That nitrification takes place with a gradually decreasing intensity, at one, two or three feet in depth.

6. That the seasonal average amount of available nitrogen found for the early plowed land in the su

face-foot is twice that found for the late at the same depth.

7. That the available nitrogen in the surface-foot of the early-plowed field is four times that found in either the second or third foot, early or late land.

8. That the mean soil temperature for the early plowed land is in all cases during the entire season, lower than that found for the late plowed.

9. That the low mean soil temperature found for the early-plowed land is accompanied throughout the season by a greater amount of moisture and available nitrogen than is the case with the late plowed which has the higher temperature.

10. That in many cases a high temperature is followed by a high rate of nitrification, while in others it is not, thus suggesting that the process of nitrification is more or less dependent upon what may be called the rate relation between the water content and the temperature of the soil, provided other factors are favorable.

A Natural Reservoir

WHAT AN INSECT IS.

The terms "insect" and "bug" are commonly applied to all minute organisms or anything that crawls; properly, an insect is a member of a certain class of lower animals, while a "bug" is a member of a certain order of insects. The term "blight" is incorrect, it being the common name of the fungus disease of plants, themselves low parasitic forms of plant life. Insects constitute the class Hexopoda or Insecta, and the derivation of the former Greek word gives the chief distinctive characteristic of insects, that is, they possess six feet. Insects are, zoölogically, closely related to spiders, scorpions and centipedes, lower forms of invertebrate animals, but further distinguished from them by having the body segments divided into three well defined parts, and supplied with certain appendages.

The production of aluminum in the United States has increased tenfold in as many years. In 1883 the total production was 83 pounds. In 1904 it was 8,600,000 pounds.

Oil and Water Mixed to Produce Oranges.

The transmutation of California Crude Oil into the golden citrus fruits is certainly something to be wondered at. Few citrus growers realize that they owe their success in a large measure to the rich deposits of crude oil in Southern California. Every orchard must have water, and the large part of that water has to be pumped. This requires power, and the cost of that power is a material part of the cost of production. With coal at $12.00 to $14.00 per ton to generate steam, and the expensive attendance of a steam plant, or with gasoline at 30 cents to 40 cents per gallon for use in gasoline engines, the Southern California citrus grower would find the development of water a very expensive proposition.

The orchardist must have soil, water and power, and he finds them all actually under his feet. The distillate from native oil is very different from the gasoline of the east, and for that reason many engines built for gasoline have great difficuly in using it; but the orchardist needs to find the ideal engine for the home fuel.

Pig iron and coke with steel and brass are the only products necessary to import, and out of these crude raw materials is fashioned, in our own Southern California, a distillate engine which has not only grown to be the popular motive power in Southern California, but which through its own intrinsic merits and the aggressive, enterprising management of the company has become the favorite in sections far removed.

If ten years ago a public statement had been made that thirteen thousand gallons of water could be taken from the ground and pumped forty feet high with a fuel cost of one and eight tenths of a cent, it would have been received as a huge joke; or a statement that the same quantity of water, two hundred and twenty feel below the surface of the earth and delivered on the ground for seventeen cents, (cost of fuel) it would have seemed a still more laughable proposition. Yet these economies are an every day matter ot the users of Western Gas Engines, burning the native No. 2 distillate. The economy is so marked that many large companies have taken out electric motors and substituted these engines with the result that in one year, the difference in the cost of operation fully paid for the engines.

These engines have also become famous for the generation of electricity, electric lighting plants using them having found the fuel cost to be considerably less than one cent per kilowatt. This will look like cheap electricity to farmers who are paying fifty to one hundred per cent more.

The Western Gas Engine Company, designers, patentees and builders of this engine, is a Sothern California enterprise, owned by our own people, paying wages and salaries to one hundred and fifty men, and supporting not less than four hundred to five hundred individuals. The engine was designed especially for the farmers of Southern California, and it is pumping water not only for citrus growers, but for every agricultural interest in the State. Alfalfa growers will see at once the enormous profits with water so cheap. The cost of fuel for small engines is so small as to be hardly a factor, but the necessity of continued and satisfactory operation have made the Western, with its many automatic arrangements the ideal power for the purpose.

It is the practice for the farmer to run his own engine leaving it operating while he is taking care of the water, so that there is no cost for engineer. The Company builds all sizes from 7 H. P. to 180 H. P. Maintain an engineering department,, designs, constructs and installs complete plants of any size, under guarantee as to the amount of water and quantity of fuel. Address the Western Gas Engine Company, Los Angeles, California.

Now is the time to go for gophers with **Bille's Gopher Poison.** The gophers go for it and it will go for them good and plenty every time.

This is a photo of 201 killed in one day on a ten-acre field before they could get back to their holes, wi h one bottle of

Bille's Gopher Poison

Endorsed by Agricultural Colleges and Experiment Stations. Not one of the ordinary poisons, but in a class by itself. Has had greatest success in the Middle West. The secret being that it is most attractive to gophers, squirrels, etc., and sure death to them. It gives the grain a glossy coating, retaining the poison for weeks. Hundreds also die in their holes by eating it there. We have bought the patent rights for this section and are selling at the eastern price of $1.25 for large bottle. The ingredients cannot be bought at a drug store for that price. Money refunded if not as represented—so printed on the bottle. If your dealer does not keep it, send $2.50 for two bottles, express prepaid by us. Any way send for circular with affidavit of above killing and a few out of many testimonials.

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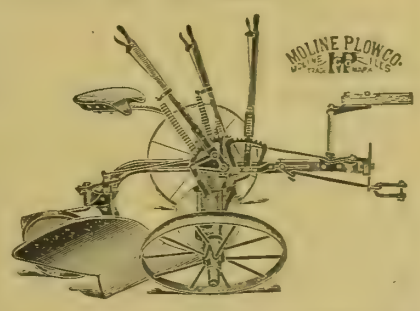
last season. Since its introduction the sales on this tool have increased rapidly from year to year until last season it required, in round numbers, 30,000 to supply the demand. This ought to interest a man who is going to buy a plow. It means that after due consideration 30,000 farmers agreed that the Good Enough is

"THE BEST PLOW ON EARTH FOR THE MONEY"

A MOST DESIRABLE AND ECONOMICAL FEATURE IS THE EASE WITH WHICH BOTTOMS OF DIFFERENT SIZES CAN BE FITTED TO THE SAME BEAM.



The Good Enough is extremely simple. It has the desirable feafures of up-to-date and high priced sulky plows without the complicated construction of the very high lift type. The land axle has a yielding spring—uneven ground does not affect depth of furrow. **Turns square corners either right or left.** The landing lever and swinging clevis permit the operator to change the land of the plow instantly without stopping the team or leaving the seat. It is furnished with pole attachment when ordered. Made right and left hand. Sizes from 10 to 18 inches. Bottoms for every condition. Will plow any soil that can be plowed with a moldboard plow.

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Which have won numerous valuable prizes over the Western and Coast States, as well as Orient, would call attention to his change of address as below, also to a

Few Very Choice White Leghorn Cockerels

(Like Cut) with which to improve your flocks. Line Bred for EGG PRODUCTION for several years from World's Champions, from Eggs TRAP NESTED CONTINUOUSLY as by NO OTHER BREEDER on this Coast. Ample range on over 1000-acre grain and fruit ranch. Owing to the extensive real estate business of Howe & Co. we have been enabled to repurchase all our former flock of winners at various World's Fairs, New York, Boston, etc., and now have the BEST FLOCK of WHITE LEGHORNS in the WORLD, including the famous "Rob Roy, Jr.," "King Edward," valued at $300 and $100 respectively; "Busy," record 29 eggs in one month; "Princess," record 3 eggs in one day, 5 eggs in three days, 9 eggs in eight days; "Snow Queen," "Queen Bess," etc., etc. About 300 birds.

Best, Cheapest, Most Simple and Practical Trap Nest Made

Scotch Collie Pups Unsurpassed by any one's, equalled by any one's, equalled by few. Both sire, grand sires and grand dams, valued and sold for $3,000.00 to $10,000.00 each. World's Champions—as these promise to be. Will sell at very reasonable prices, $25 and upwards.

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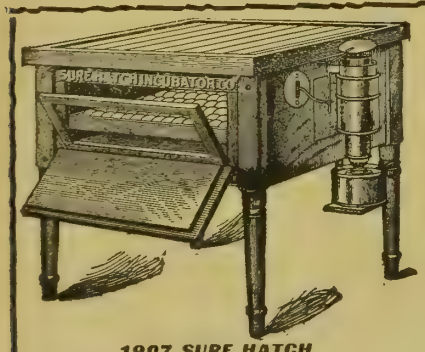

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The ONLY incubator that will hatch every hatchable egg. Are made of California redwood, hot-water pipes of 10-oz. Lake Superior copper, deep and removable nursery, and a regulator that is ABSOLUTELY AUTOMATIC and POSITIVE.

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Our yards are now mated for the season; containing winners of nearly 100 Prizes, Specials and Cups at California's leading shows. Our handsome Mating List and Catalog describes them all. Send for it today; it is free. Our birds are bred for utility and heavy egg production as well as beauty. All egg orders booked in rotation. Satisfaction guaranteed.

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We ship them everywhere. Pure Bred White Leghorn Chicks from the Best Egg Producers in the United States

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Gent emen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come s far and being so long on the way without the loss of a single one, but it is an undisputed fact that such was the case We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. CAMPBELL.

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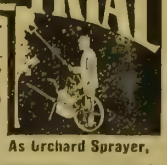
HURST POTATO & ORCHARD SPRAYER ON FREE TRIAL

No money in advance—Pay when convenient. Sprays everything—Trees, Potatoes, etc. 4 rows at a time—20 acres a day. *Doubles your crop.* Even 2-acre growers say: "It pays for itself first season," as it has so many uses. A 16-year old boy can operate it with ease. Brass ball valves, Cylinder, etc. *Guaranteed 5 years. Wholesale Price*—(where no agent) AGENTS WANTED. After trial, if you keep it, we make terms to suit you to first one in each locality. "SPRAYING GUIDE" and full information Free. We pay Freight. Write today.



Special Free Offer

H. L. HURST MFG. CO., 67 North St., Canton, O.

As Potato Sprayer. As Orchard Sprayer.

INCUBATORS

1907 Los Angeles

"Model" Made by Chas. A. Cyphers

Best Hot Water Incubator

"Peerless" Made by Henry Albers Co.

Call and See Them or Send for Free Catalogue

315 S. Main **Henry Albers Co.** Los Angeles

When writing advertisers, mention Cultivator.

The Produce Markets

Los Angeles Markets

LOS ANGELES, Feb. 6, 1907.

Butter

The movement in butter is slow at the present prices. Fancy coast creamery butter was lowered to 75 cents per 2-pound square yesterday.

Local Creamery, 2lb sq	80
Valley Creamery	75@80
Coast, fy	75
Cooking	**22@24**

Cheese

Young America and California hand cheese are firmer.

Cal Young American, per lb	18½
California Anchor	**17**
Cal 3-lb. hand	19½
Northern	**17**
Domestic Swiss	**20**
Imported Swiss	**28**

Eggs and Poultry

Ranch eggs were reported weak in all quarters at the ruling prices. Receipts for the day were 516 cases. Egg arrivals continue to increase daily. The warm, dry weather accentuates production, and general declines may be expected as long as the present increased arrivals continue.

Eggs, fresh ranch, per doz	30
Northern candled	29
Fresh Eastern	26

The following are average prices which dealers pay to producers for live weight:

Hens, per lb	15@16
Young Roosters, per lb	16
Fryers	18
Broilers, per lb	20
Old Roosters	**8**
Turkeys	17
Geese	14
Ducks	14

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lb	7.50
Prime Steers	5
Heifers	4
Calves, per lb	5
Sheep, ewes, per head	5.25
Lambs, per head	7.50
Wethers	5.50

Potatoes

Sales on change yesterday were—One carload of fancy Highland potatoes, 1 carload of Minnesota Burbank potatoes.

Stock of eastern potatoes have advanced 10 cents on the hundred weight. Idaho Rurales, Colorado Rurales, Wisconsins and Minnesota Burbanks are now quoted at $2 flat per cwt.

Salinas	2.20@2.50
Burbank, Local	2.00
Highland	2.00
Sweets, Yellow, per sack	3.75@4.00

Vegetables

Beets, per doz	40@60
Bell Peppers, Green, lb	5
Chili Peppers, Green	6@7
Chili, Dried, per lb	25
Cucumbers, per box	3.50
Cauliflower, per doz	40@75
Carrots, per doz	40@60
Celery, per doz	40
Egg Plant, per lb	15
Garlic, per lb	**6**
Green Corn, local, per sack	**75@1.25**
Green Onions, doz. bunches	25@30
Lettuce, per crate	1.25@1.40
Lima Beans, per lb	7@8
Onions, Aust. Brown, sk	1.75
Onions, Y. Danvers	1.75
Parsnips, per doz	35@50
Rhubarb, per lb	6
Radishes, per doz	20@40
String Beans, per lb	8@12
Sugar Peas, per lb	10
Turnips, doz bunches	40@60
Tomatoes, per box	1.25@1.50
Wax Beans, per lb	10@13

Citrus Fruits

Lemons	2.00
Valencias	1.50@2.00
Navels	1.50@1.75
Grapefruit Seedless	3.00
Grapefruit, seedlings	2.00@2.50

Fresh Fruits

Apples, Bellefluer, per box	1.35@1.50
Apples, Ben Davis	1.40@1.50
Pears, Bartlett, per box	**3.50@4.00**
Pears, Winter Nelis, per lb	6@7

Dried Fruits

Evap. Apples, fancy, per lb	9
Apricots	17
Peaches	11@12½
Pears	13
Plums	11
Prunes, fancy	7@9

Beans, Dried

Pink beans, number one, have been advanced to 2.75.

Limas, No. 1, per cwt	5.50
Pink No. 1	2.75
Lady Washington	2.90@3.00
Small White	3.60@3.75
Black Eyes	4.50@5.00
Garvanzas	**4.25@4.50**

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb. cans, lb.	7½@8
Extracted, white	7½
Light Amber	7
Comb, water white, 1-lb fms	16
Light Amber	14
Beeswax	25

Nuts

Almonds, new, per lb	19@20
Peanuts, Virginia	7
Peanuts, California	6½
Walnuts, No. 1, S. S.	14@15

Hay

Barley, No 1	14.50@16.00
Barley, No 2	11.00@12.00
Alfalfa, Local, per ton	14.00@16.00
Plain Oat Hay, No. 1	18.00@20.00
Plain Oat Hay No. 2	9.00@15.00
Wheat No. 1	14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, No. 1, per cwt	1.40
Barley (to producer)	1.00@1.05
Rolled Barley	1.30
Corn, per cwt	1.40
Cracked Corn	1.45
Feed Corn Meal	1.45
Shorts	1.45
Bran	1.30
Oil Cake Meal	2.75
Cocoanut Meal	1.50

San Francisco Markets

SAN FRANCISCO, Feb. 5th, 1907.

Butter.

California, ex. per lb	39
California, firsts	36
California, seconds	28
Packing stock	20

Cheese

New California, fancy	14
Cal. Young American, fancy	15

Eggs and Poultry

Fresh Ranch Eggs	41
Eggs, first, per doz	36
Hens, per doz., small	5.00@5.50
Hens, large	600@7.50
Young Roosters, large	6.00@8.00
Young Roosters, small	**4.50@5.50**
Old Roosters, per doz	5.00@5.50
Fryers, per doz	5.50@6.00
Broilers, per doz.	3.00@4.00
Ducks, young	6.00@8.00
Geese; per pair	2.00@3.00
Turkeys, per lb	17@20

Live Stock

Steers, No. 1	8@8½
No. 1 Cows and Heifers	**5½@6**
Hogs, 80 to 130 lbs	7¼@7½
Hogs, 250 to 350 lbs	7½
Calves, per lb	5@5½
Lambs, yearlings	6@6½

Potatoes

Oregon Burbank	1.45@1.75
Salinas Burbanks, ctl	1.50@2.00
Rivers	1.50@1.65
Sweet Potatoes, ctl	2.75@3.00
New Potatoes	4.00

Vegetables

Asparagus, per box	**125@1.50**
Cucumbers, per doz.	1.00@1.25
Chili Peppers, Green	**50@85**
Egg plant per box	3.00@3.50
Green Peas, per lb	9@10
Summer Squash, large crate	1.50@1.75
Onions, Red, per sack	1.00@1.25
Onions, Yellow	1.00@1.25
Peppers, Green, Bell	40@75
Rhubarb, per box	**75@1.00**
Summer Squash, large crate	2.00
String beans	15@17
Tomatoes	1.50@2.25
Wax Beans	15@17

Citrus Fruits

Lemons	75@2.50
Valencias	**300@400**
Sweets	**3.25@3.50**
Navels	1.50@2.75
Seedlings	**2.50@3.00**
Grapefruit	**2.00@3.50**
Limes	**3.50@4.00**

Fresh Fruits

Apples, fancy, per box	1.25@2.50
Apples, common, per box	**75@1.00**
Blackberries, per chest	3.00@4.50
Cantaloupes, large crate	40@1.00
Grapes, Seedless	60@90
Grapes, Black	40@75
Grapes, Muscats, crate	100@1.25
Grapes, Tokay	80@1.10
Plums, per box	75@1.00
Pears,	1.00@1.50
Prunes, per box	60@85
Raspberries, per chest	12.00@14.50
Strawberries, Longworths	7.00@8.00

Dried Fruits

Apples (evap.)	7@8
Apricots, per lb	15@18
Figs, white	2½@4
Muscatels (loose)	7@8
Prunes	2@2½
Peaches	10@12½

Raisins, seeded (1906)	8½@10
Thompson, unbleached	7½
Thompson, bleached	9@11

Beans and Seeds

Limas, No. 1	4.25@4.40
Pink	1.95@2.10
Large White	2.25@2.50
Small White	2.80@2.95
Black Eyes	4.50@4.65
Red Kidneys	3.40@3.75
Bayo	2.00@2.30

Hops

1906 Crop (future lb.)	10@12½

Nuts

Almonds, new	15@17½
Peanuts, Virginia	6½
Peanuts, California	5½@6
Walnuts	11@15

Honey

Clear White Comb	16½
Amber	14@15
Extracted	5½@7

Hay

Barley, No 1	12.00
Barley, No 2	10.00
Alfalfa, local	10.00@13.00
Oat	17.00@19.00
Wheat No. 1	17.00@19.00
Wheat, No. 2	13.00@16.00

Grain

Wheat No. 1	1.27@1.28
Barley No. 1	1.12@1.15
Corn, small yellow	1.50@1.55
Corn, yellow	1.27@1.30
Oats, White	1.45@1.55
Oats, Red	1.30@1.75
Ground Barley, per ton	24.00@25.00
Bran, per ton	20.00@22.00
Straw, per bale	60@80
Feed Corn Meal, per ton	32.00
Cracked Corn, per ton	32.00
Oil Cake Meal, per ton	38.00
Cocoanut Meal, per ton	25.50
Calalfa Meal, per ton	21.00
Mealfalfa, per ton	21.00

Citrus Market

The latest news of any scope, which has been received from the New York market is as follows; shorter and more consise notes of later date appearing as preludes to the price schedules.

Fortunately, citrus shipments have been rather light of late. The market has absorbed with considerable enthusiasm the fruit that has been offered, and has, under nearly all circumstances, paid a good price for it.

The orange market fell off from 25 cents to 50 cents per box in New York on Monday of last week, and continued weak until Thursday, when a marked improvement was noticed. Other auctions did not show any weakness and prices remained good. Diversions of a lot of fruit that had been tramping the country was the main cause of low prices in New York.

Up to Monday only about ten cars a day had been offered, and as this was all fresh fruit of good quality, prices held up. On that date thirty-four cars, largely stale fruit, was sold and prices went down with a rush. Dealers have been very conservative this year and have been expecting just such a break and now that it has arrived and a lot of old fruit gotten out of the way the situation will clear a little. Lack of cars will prevent any great congestion. The fruit is good, and when dealers get educated to the large sizes, the market should show a rapid improvement, provided weather conditions are normal.

So far there have not been many reports of freezing en route except of some of the cars that had been out anywhere from one month to six weeks.

On the whole the situation is not at all bad and, though orders will be slow in coming for the next two weeks, there seems to be no good reason why all the fruit going out should not find a ready market at fair prices. All shippers concede that the country can absorb 150 cars a day at this time, and for the past seven days but 120 cars a day have been forwarded. As soon as the trade realizes that they are not to be flooded with fruit, they will get over their present pessimistic attitude and buy freely. F. o. b. orders are very slow at the present time, but the shipper does not seem to be disposed to lower prices on that account. For high grade oranges from the best districts they are quoting at from $1.75 to $1.85 for extra fancy, $1.65 to $1.75 for fancy, $1.50 to $1.60 for extra choice, and from $1.25 to $1.40 for choice. There is yet over 100 cars of northern fruit left in Tulare couty. The sizes of this fruit run from 176s to 216s and is in great demand on that account. The extra fancy northern fruit, $2 a box, is freely offered.

NEW YORK MARKET.

NEW YORK, Feb, 6.—A heavy blizzard raged all day yesterday, tying up traffic and business and no sales of citrus fruits were made.

Sales on the 4th were as follows:

The market is practically unchanged. It is snowing. Twenty-six cars oranges and two cars of lemons sold today.

NAVELS—	AV.
Blue Globe, T. I. Riverside Ft Ex	$3.10
Blue Globe, ex, fy, Riverside Ft Ex	2.60
Red Globe, ex ch, Riverside Ft Ex	2.30
La Mesa, ex, fy, Riverside Ft. Ex	2.60
Blue Seal, ex fy, A C G Ft Ex	2.15
Claremont, fy, S A Ft Ex	2.00
Greyhound, ch, S A Ft Ex	1.85
Lochinvar, ex, ch, R H Ft Ex	2.35
Iris, ex, fy, D M Ft Ex	2.30
Parrot, ex, ch, S A Ft Ex	2.05
Red C. ex, ch, Covina Ft Ex	2.15
Cougar, ch, Covina Ft Ex	1.95
Warrior, ex, ch, Stewart Ft Co	2.30
Redlands Hts, Redlands	2.25
Victory, ex, ch, C C U	1.80
Dragon, st, C C U	1.75
Ruby, fy, C C U	1.85
Truth, fy, F W Speich & Co	2.30
La Paloma, ex ch, F H Speich Co	2.20
Camellia, ex, ch, Red Mut O Gros	2.30
Criterion, o. r. Penn Ft Co	2.15
Wolf, st, Penn Ft Co	1.90
Pyramid, o. r. Strachan Ft Co	2.30
Rose, ex fy, Red O Gros Assn	2.65
Clover, ex ch, Red O Gros Assn	2.30
Independent, fy, Highland Dist.	2.45
Independent, ch, Highland Dist	2.15
Orange Prince, fy, Collins Ft Co	2.85
Orchard Q., o. r. Collins Ft Co	2.40
Orange P., fy, Collins Ft Co	2.85
Orchard Q., ch, Collins Ft Co	2.55
Old Mission, fy, Chapman's	2.50
Old Mission, ch, Chapman's	2.30
Sunshine G., ch, J F Bowen	2.25
Knight, fy, Ely-Gillmore Ft Co	2.15
West Highlands, o. r. Highland	2.50
West Highlands, ch, Highland	2.25
West Highlands, st, Highland	2.05
Native Son, T. I. King Ft Co	2.55
Sunshine Grove J F Bowen	2.15
Blue Keystone, King Ft Co	2.25
Flower, fy, Upland Dist	2.00
La France, ch, J S Kuns Co	2.00
Knight, fy, Ely-Gillmore Ft Co	2.00
Orchard, T. I. National Orange Co	3.10
Standard, st, National Ft Co	2.55
Pointer, ex ch, A C G Ft Ex	1.90
LEMONS—	AV
Canna, ex ch, S B Ft Ex	4.10
Plain End, st, S B Ft Ex	3.40
Truth, fy, F H Speich Co	4.00
Independent, fy, Highland Dist. 5	4.05
Independent, ch, Highland Dist	3.60
TANGERINES (halves)—	AV.
Blue Seal, ex fy, A C G Ft Ex	2.00

Sicily lemon sale again postponed.

BOSTON MARKET.

Feb. 4.—The market is easier. Weather cold. Sixteen cars oranges sold, fifteen cars on track.

NAVELS.—	AV
Laurel, fy, C Ex	1.35
Lily, ch, Q C Ex	1.30
Goddess of Fruit S A Ft Ex	2.05
Parrot, ex, ch, S A Ex	2.05
Whittier, ex ch, S T Ex	2.20
Golden Gate, ex fy, Red G O Assn	2.30
La France, ch, J S Kuns	2.05
Highlander, ex fy, H-land Ft Gros	2.55
West Highlands, fy, Highland	2.40
California O., Riverside Hts. O G A	2.35
Lion Head, ex fy, I L Lyons & Son	2.70
Golden Flower, ex fy, Red G O A	2.50
Tahoe, ex fy, Red G O A	2.60
Blue Flag, ex fy, Spence Ft Co	2.40
Gavilon, fy, F H Speich & Co	2.40
Gavilon, fy, F H Speich & Co	2.40
Independent, fy, Highland Dist	2.70
Independent, fy, Highland Dist	2.30
West Highlands, ch, Highland D	2.35
Gondolier, ex fy, C C U	2.00
Lighthouse, st, C C U	2.00

PITTSBURG MARKET.

Feb. 4.—The market is steady. Weather cold.

NAVELS—	AV.
Lochinvar, ex ch R H Ex	$2.60
Celt, st, R H Ex	2.40
Parrot, ex ch, S A Ex	2.50
Stag, fy, A C G Ex	2.80
Pointer, ch, A C G Ex	2.20
Tulip, ex ch, T C Ex	2.85
Oak Leaf, ch, T C Ex	2.70
Conqueror	2.40
Florencia, fy, J M Riley	2.60
Florencia, fy, J M Riley	2.55
Florencia, ch, J M Riley	2.65
Florencia, fy, J M Riley	2.60
Conqueror	2.35
LEMONS—	AV.
Tulip, ex ch, T C Ex	3.00
Full Value, st, T C Ex	3.05
Oak Leaf, ch, T C Ex	3.10

PHILADELPHIA MARKET.

Feb. 4.—The market is steady. It is snowing. Eight cars navels and two cars of lemons sold. Fourteen cars of Florida sold.

NAVELS—	AV.
Cougar, ch, Covina Ex	$2.20
Cougar, ch, Covina Ex	2.10
Stag, fy, A C G Ex	2.50
Pointer, ch, A C G Ex	1.90
Butterfly ex ch Covina Ex	2.25
Native Son, T. I. King Ft Co	2.40
Salt Lake, st, King Ft Co	2.25
Lordsburg, o. r. Lordsburg D	2.45
Ruby, fy, C C U	2.20
Parrot, ex ch, S A Ex	2.25
LEMONS—	AV.
Watchumna, ex ch, T C Ex	2.90
Gondolier, ex ch, C C U	2.70

ST. LOUIS MARKET.

Feb. 4.—The market is very strong. Weather very cold. It is snowing. Five cars sold and four on track.

NAVELS—	AV.
Forget Me Not, ex fy, T C Ex	$2.90
Oak Leaf, ch, T C Ex	2.85
Full Value, st, T C Ex	1.90
Pointer, ch, A C G Ex	2.45
Pointer, T I A C G Ex	2.15
Pansy, ex fy, Colton O G A	2.15
La Belle, st, Colton O G A	2.35
La Hermosa, fy, Hasson Bros.	2.30
Del Monte, ch, Hasson Bros	2.55
LEMONS—	AV.
Harbor, ch, Chas Mohnike	2.90
Standard, st, Chas. Mohnike	2.65

CINCINNATI MARKET.

Feb. 4.—The market strong on large sizes. It is snowing. One car on track.

NAVELS—	AV.
Hawk, S A Ft Ex	$2.10
Hawk, S A Ft Ex	2.15
LEMONS—	AV.
Greyhound, ex ch, S A Ex	3.00
Duck, st, S A Ex	2.55

CLEVELAND MARKET.

Feb. 4.—The market is steady and the weather very cold. Eight cars sold.

NAVELS—	AV.
Butterfly, ch, Covina Ex	$2.20
Teal, st, Covina Ex	2.15
Gavilon, fy, F H Speich & Co	2.55
Rialto Queen, ex, fy, Rialto O Co	2.10
Red Skin, ex ch, Rialto O Com	2.00
Parrot, ex ch, S A Ex	2.15
Relay Knight, ex fy, R H Ex.	2.45
Newsboy ex ch R H Ex	2.10
Purity, fy, E. E. Wilson	2.15
Country Home, ch, E. E. Wilson	1.85
Lucky, ch, E E Wilson	1.90
LEMONS—	AV.
Golden Sceptre Rialto Orange Co	2.00
Peerless, ex ch, San Diego Ft Co	2.15
Sunset, ch, San Diego Ft Co	2.10

CITRUS FRUIT SHIPMENTS.

LOS ANGELES, Feb. 4.—Friday, February 1; Oranges, 63 cars; lemons, 21 cars. Saturday and Sunday, February, 2 and 3; Oranges 99 cars; lemons, 6 cars. Total to date this season 4682 cars, of which 623 cars were lemons. Total to same date last season, 6760 cars, of which 789 cars were lemons.

LINERS

Liner Advertising
Advertisements in Liner Column 1¼ cents per word. Eight words to a line. No advertisement taken for less than 25 cents.

HONEY.

PURE HONEY—GUARANTEED WHITE sage and orange bloom, shipped direct to consumers, 60-pound cans $3.75 f. o. b. F. McNAY, Redlands, Cal.

MACHINERY.

PUMP PLANT FOR SALE—3 H. P. GAS engine, double acting cylinder, and pipes complete. All in good working order, capacity 2300 gals. per hour. Economical, reliable outfit for a little money. JOSEPH THORNDIKE, Pasadena, Cal.

POULTRY WANTED.

WANTED—BUFF COCHIN BANTAM HENS. Write description and price. VARIAN'S POULTRY YARDS, 895 N. Catalina Ave., Pasadena, Cal.

PUPPIES.

FOR SALE—SCOTCH COLLIE PUPPIES. Pedigree furnished with every sale. $15 and $25. Write for description. E. B. VARIAN, 539 Douglas Bldg., Los Angeles.

REAL ESTATE.

FOR SALE.—40 ACRES OF IMPROVED land. Good buildings; free water. W. L. WEAVER, MERCED, CAL.

VEGETABLES.

CHILEAN WATERMELON SEED.—EXTRA select. No seed from culls. By mail, 4 lbs or less, 75 cents per lb; over 4 lbs, by express 60 cents per lb. S. FAIRBURN, Burbank, Cal

TREES.

FOR SALE—GRAFTED WALNUTS, PLACentia perfection on wild roots, 8 to 12 feet high, one year old and some two years old. For further particulars address ADOLPH RIMPAU, Anaheim, Cal.

WASHINGTONIA FILIFERA AND ROBUSTA and Euretia edulis palms, from 5 to 10 feet high, to exchange for other kinds of nursery stock or sold for cash. Give offers. Enough for carload lots. Erickson & Heinz, Brawley, Cal.

FOR SALE.—500 MISSION OLIVE TREES 20 to 25 dollars per 100, fine stock. H. L. BAUER & SON, 737 So. Spring. St.

BERRIES.

HIMALAYA BERRY PLANTS—2 FOR 25c. $1.00 per doz. $6.00 per hundred. Express prepaid. BASSETT'S FLORAL GARDEN, Loomis, Cal.

HIMALAYA BLACKBERRY, $1 PER DOZ., $6 per 100: Mammoth Blackberry, Loganberry and Lucretia Dewberry, 50c per dozen, $3 per 100.
Adelbert Cooley, R. D. 2, Laton, Cal.

COFFEE.

SPARR'S JAPARA COFFEE-YOU AND YOUR friends are offered an opportunity to buy the finest drinking coffee grown, price 25 cents per lb., packed in 5-lb. cans, one dozen in case, 60 lbs., freight prepaid. This is about two-thirds of the usual price charged for ordinary coffee. Send $2.80 for 10-lb. can. Liberal sample sent by mail on receipt of 4 cents postage. F. W. Sparr, 114 East Market St., Los Angeles, Cal.

LOVERS OF GOOD COFFEE—YOUR ATTENtion is respectfully called to the above advertisement. If you enjoy a cup of really good coffee you can buy it from me almost as close as you can buy sugar. Make up an order with your neighbor and write to me. I am a direct importer of Tea and Coffee and can save you money. I ship to all parts of the Pacific Coast and guarantee every pound fresh and pure. Established in Los Angeles ten years. F. W. Sparr, 114 E. Market St., Los Angeles.

"The Farmer's Fire-Arms Company."

There are upward of fifty million rural residents in this country, and in every one of these farmer's families there is needed:

First: A good, strong, accurate and reliable revolver to protect house, barn and hennery from burglars and sneak thieves, and, when occasion requires, to slip in the overcoat pocket when out on the lonely roads.

Second: A good, accurate and reliable single-shot rifle for killing beeves, sheep and hogs and for shooting hawks, squirrels, rabbits and other game.

Third: A good reliable shot-gun for hunting quail, partridges, shooting wild ducks, wild geese, wild turkey, etc.

These should be all made by reliable manufacturers, who have their name stamped on them, in order that there will be no danger of cheap materials and accidents. But they need not be expensive unless the farmer likes "to make a show."

Every farmer needing a fire-arm of any kind should send for Hopkins & Allen's big "Gun Guide and Catalogue" for 1907. This book tells exactly how to pick out the right kind of fire-arm for the use you intend putting it to, and explains in detail the material, workmanship and finish that is put into each Hopkins & Allens arm. Write to the Hopkins & Allen Arm Company, 103 Franklin street, Norwich, Conn., and get copy of this "Gun Guide and Catalogue" free.

Making a Hit.—Biggs—Did DeRanter make a hit in his new play last night?

Diggs—No, I think the hit was made by some one located in the gallery. De Ranter was the target.

POULTRY.

HOLMBY POULTRY FARM,
Breeder of S. C. Black, Buff and White Orpington, Barred Rocks, S. C. White Leghonrs, Pekin Ducks, Mammoth Bronze Turkeys, Tumblers and Homer Pigeons, 130 Prenuims won at 4 shows. stock and eggs for sale,—write your wants. ARTHER LETTS Prop., WILL PURDY, Manager, Hollywood, California.

ORPINGTONS AND REDS; PEKIN DUCKS—13 prizes on 16 entries also silver cup at "Breeder's Show" 1907. Eggs now ready, can't help but hatch winners, we breed them that way, fifteen years' experience counts. Our stock are great layers, rapid growers, top market quality, we guarantee satisfaction. GOODACRE BROS., Box 45, Compton, Cal.

BLUE ANDALUSIANS—I did not exhibit this year but have better stock than ever. A few nice trios for $5.00, also good breeding cockerels for $2 and $3 each. Must have the room they occupy. Eggs for hatching $2 and $2.50 per 14. No fear of inbreeding as we have three strains.
MRS. T. R. GRIFFITH, 3111 Walton Ave.

FOR RENT—TURKEY RANCH, EITHER 40 or 80 acres suitable for turkey and chicken ranch—natural pasture, land will grow alfalfa, millet, etc., artesian well flowing 46 inches, dry climate, near Thermal Cal.—For particulars, address THEO. PAYNE, 345 S. Main St. LOS ANGELES.

EL MONTE—BUFF COCHIN BANTAMS, winners at St. Louis World's Fair, also at the Los Angeles show. Gray or Toulouse geese, guinea fowls, eggs for hatching at reasonable prices. BERT REYNOLDS, El Monte, Cal.

FOR SALE—BARRED ROCKS, WINNERS OF 11 prizes and Silver Cup for Best Barred Rock Male at Breeders Show, 1907. Some choice cockerels for sale. Eggs. Write your wants. Frederick Espe, 4425 So. Main St., Los Angeles, Cal.

SPECIAL NOTICE.—TO RANCHERS AND Poultrymen. We have just issued a catalog on Poultry Supplies and Seeds that every one should have. It is free for the asking. S. H. Church, 505 South Main street, Los Angeles.

SINGLE-COMB WHITE LEGHORNS, FINE white, large, birds; good layers. Hatching and shipping chicks. Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER, Ontario, Cal.

FOR SALE.—EGGS FOR HATCHING. From Buff Leghorns and Barred Plymouth Rock fowls, good color, fine layers. Eggs $1.00 to $1.50 per 15. Wm. C. PARKER No. 111 Pacific Ave. Santa Cruz, Cal..

FOR SALE—PURE BRED STOCK, S. C. White Leghorn Eggs. Large eggs, great layers, eggs for hatching only. $1.50 per 15. $6.00 per hundred. RICHARD POWERS. Anaheim. Cal.

FOR SALE—ROSE COMB WHITE LEGhorn cockerels and pullets. Eggs for hatching. VARIAN'S POULTRY YARDS, 895 N. Catalina Ave., Pasadena, Cal.

FOR SALE—EGGS FROM TWO PENS OF extra fine White Plymouth Rocks, $2 per 12. FRANK H. THOMAS, 1820 Hobart Blvd., Los Angeles, Cal.

BLUE ANDALUSIANS— THOROUGHBRED stock, good laying strain. Eggs $1.00 per 14, $5.00 per hundred. OAKDALE RANCH, Fallbrook, Cal.

SILVER LACED WYANDOTTES

At the recent Poultry Breeder's Show we won eight ribbons on eight entries. "The best quality seen here for years, 1st cockerel has the best marked wing we have seen." —Pacific Fancier.
Eggs $1.50 per 15.

WHITE PLYMOUTH ROCKS

Grand laying strain, large vigorous stock, eggs especially recommended for incubator hatching, $1.00 per 15, $5.00 per 100, special mating $1.50 per 15.

FAIRVIEW POULTRY YARDS
A. E Nelson, El Monte, Cal.

Burbank Phenomenal Berry Plants

Choice plants grown from tips only 75cts. per dozen net, $1. per dozen by mail. $5. per hundred; 50 at hundred rate.
C. NELSON, MONETA, CAL.

Simplicity

Men utterly unfamiliar with gasoline engines find no difficulty in learning to handle

"Western" Engines

WATER PUMPED BY 50 H. P. "WESTERN" ENGINE

Large Plants Our Specialty, up to 700 H. P.

Western Gas Engine Company, EL MONTE, CAL., Oct. 15, 1906.
Los Angeles, California.

I have been using one of your 50-H.P. "Western" engines to pump water on my ranch at Bassett, for the last two years.

The high recommendations the "Western" received from some of my neighbors made me expect a great deal of the engine. Yet, notwithstanding the fact that I never ran a gas engine before, it has given me no trouble, and in its ease of operation, fuel economy and wearing qualities, my highest expectations have been more than realized.

I have no trouble in starting it by myself. In fact, a child could almost operate it, and it needs so little attention that I can easily run the engine and do the irrigating at the same time.

I am lifting 175 inches of water 65 feet, and using a little less than 5½ gallons of No. 2 Distillate per hour.

I am pleased with the engine and the way you have treated me, and if I were to buy a hundred engines, they would certainly be "Westerns."

(Signed) R. E. DANCER.

Western Gas Engine Co.

908-932 NO. MAIN ST., LOS ANGELES — 927 L ST., FRESNO
THIRD AND WASHINGTON, OAKLAND — S. C. SMITH, GOLDFIELD, NEV.

Send for Catalogue "C."

P. K. WOOD'S

Improved Deep Well Propeller Pump

FOR IRRIGATING AND MINING

After devoting several years to deep study and experiments, and the expenditure of many thousands of dollars, this pump has been brought up to the point where it is practically indestructable, has an efficiency not to be excelled, and is ready to try conclusions with any deep well pump on earth. The principal improvement consists of a screw guide inserted in casing cupling and a ball bearing placed in each guide, which gives absolute protection to all parts of the pump, regardless of the amount of sand or grit which the water may contain. Write for catalogue and full description of these important improvements.

P. K. WOOD, Patentee and Manufacturer
702 No. Main St. Los Angeles, Cal.

Irrigation and Pumping

WASTING WATER ASSETS.

CALIFORNIA has learned, not only that the ground may become water-logged by over-irrigation, but that ill-considered drainage works an inconsiderate use of the water obtained from wells may so reduce the subsurface supply of water and so lower the water-plane or "table" as to threaten the reversion of large areas to comparative unproductiveness..

The United States geological survey has demonstrated that practically all the subterranean waters of a large district in Southern California, embracing 775 square miles, are connected, and that every well taps a common supply.

The overworking of pumps, the use of larger volumes of water than is necessary, and unwise drainage, have enriched the ocean with a volume of water so much larger than the rainfall, that the water-plane, which was 23 feet below the surface of the soil in 1898, is now 50 feet below.

The Californians have followed the American habit of believing natural resources to be "inexhaustible," and are amazed to find that in respect to water also they have lived beyond their means, as well as in respect to the timber supply, oil, natural gas, fish and game.

California is by no means the only state where such a condition may occur, or where the discovery may be made, too late, that water is an asset which cannot be thrown away without a penalty. Drainage schemes should everywhere be managed with a view to the possible future need of the water for irrigation.

In the California district named the waste may be repaired by the expensive works which are to bring water of the Owens river from the mountains to Los Anegels, and incidentally afford a volume for irrigation. But mountain streams are not everywhere available.

RURAL WATER SUPPLY.

In comparing the advantages of a country life with those of an existence in the city, one nowadays frequently encounters the argument that the city resident enjoys better health protection than his country brother. This is undoubtedly true, to the extent that water and the carelessness and ignorance of the individual are factors in the public health.

The crowding together of people in cities renders imperative a system of municipal care and oversight. The water supply is usually carefull selected and its purity zealously guarded; there is an efficient sewerage system to dispose of the city's waste; hospitals and pest houses are maintained; a laboratory of hygiene provides for the inspection of milk, the detection of food adulteration, and the prompt and exact diagnosis of disease.

Several of the older States now specially provide for the examination of water supplies, both rural and municipal, but while compulsory periodic inspection of such has been the rule for some time in Germany it is not until recently that anything of this nature has been enacted in the United States.

The Legislature of North Carolina established a precedent for other States to follow in passing a law which provides for the compulsory quarterly, chemical and bacteriological examination of all public water supplies within the State. Where bad conditions are found, this law provides that if proper steps are not taken within thirty days to remedy such, there is to be published in the local papers, "a plain statement of the facts for the information and protection of citizens using water."

BASIN IRRIGATION.

This method is confined for the most part to orchard irrigation. Its use, however, even for this purpose, seems to be decreasing rather than increasing. Many owners or deciduous fruit orchards have of late changed their mode of irrigating from the basin to the furrow system.

Nevertheless, the basin system is likely to continue to be popular and prevalent wherever favorable conditions exist. The conditions which are best adapted to this method are suitable crops, such as fruit trees, a plentiful supply of water during the time of irrigating, and a light, porous soil, or else a soil which cannot be properly moistened by furrows.

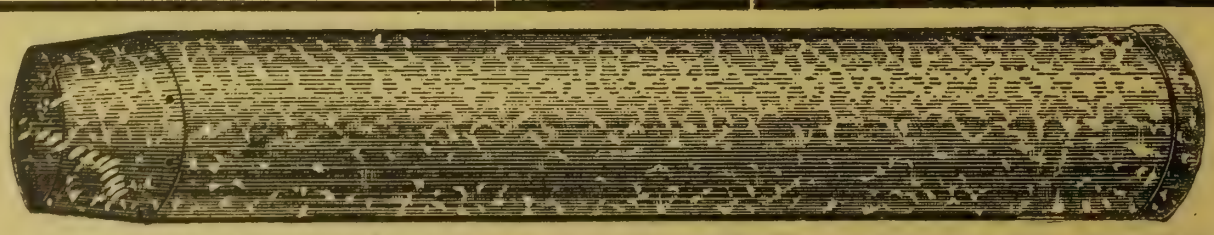
In the warmer portions of California, Arizona, New Mexico and Texas the winter irrigation of crops, particularly orchards, is becoming a fixed practice and is attended by beneficial results. As a general rule, the water supply in the places named is then abundant, and large quantities may be applied to the soil in a brief time by the basin method.

IRRIGATING BY CHECKS.

Experience of irrigators has demonstrated that the check method is best adapted to a light, sandy soil having a comparatively even slope of from 3 to 15 feet per mile. On the other hand, it has been shown that a field having a steep slope should not be checked, since such checking would require the levees to be made so high and steep and so close together that farming operations would be rendered difficult and a large part of the field withdrawn from crop production.

"That man is one of my friends," remarked the novice in public life.

"Which kind?" responded Senator Sorghum. "Friends, you know, are divided into two great classes; those whom you need and those who need you."



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SAVES WATER, GRADING AND TIME

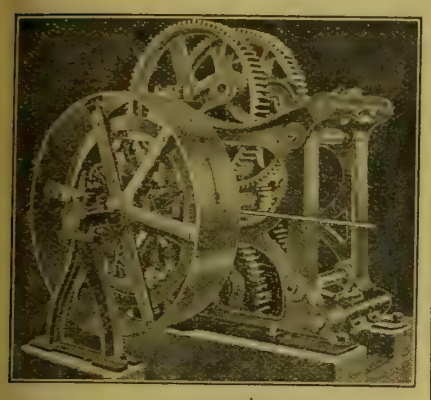
The **only** way to **Irrigate Alfalfa. Cheaper** than **Flumes.** This is only **one** of our **specialties.** We make **Riveted Water Pipe** in lengths of **Ten Feet** from **Single Sheets.** Let us **prove** to you that we make **Pipe** and **Tanks Right.** WRITE FOR CATALOGUE.

TALLERDAY MANUFACTURING CO.

632 Pacific Electric Building — Los Angeles, California

DON'T BUY GASOLINE ENGINES UNTIL YOU INVESTIGATE "THE MASTER WORKMAN," a two-cylinder gasoline, kerosene or alcohol engine, superior to any one-cylinder engine; revolutionizing power. Its weight and bulk are half that of single cylinder engines, with greater durability. Costs Less to Buy—Less to Run. Quickly, easily started. Vibration practically overcome. Cheaply mounted on any wagon. It is a combination portable, stationary or traction engine. SEND FOR CATALOGUE. THE TEMPLE PUMP CO., Mfrs., Meagher and 15th Sts., Chicago. THIS IS OUR FIFTY-THIRD YEAR.

The Pomona Pumps Are Best



for City Waterworks and Irrigation

BECAUSE—

Using machine cut and slow running gears, they are

PERFECTLY NOISELESS.

They use stepped gearing with no break in the tooth contact, doing away with all rattle and vibration.

BECAUSE—

They have an ideal motion of the pump rods, which consists of a uniform continuous slow up motion, a smooth, quick down movement with absolutely no jerk in starting the rods upward eliminating all rod breakages and valve troubles.

BECAUSE—

They will save you money in cost for power. We use machine cut gearing which alone saves ten per cent. We have a leverage in our gearing which other pump makers do not have and which they do not tell you about when trying to down us.

BECAUSE—

In pumping through long pipe lines, they deliver a continuous steady stream.

They do not hammer out your pipe line by irregular pulsations of the water column.

They save power by keeping the water in continuous motion.

BECAUSE—

They are fitted with improved oiling devices that can be filled without stopping. Pumps may run for weeks continuously.

BECAUSE—

We have advantages in our pumps that investigators appreciate at once, consequently, where one goes others follow and we are fast taking the country.

BECAUSE—

We give a guarantee of satisfaction with every plant.

Send for catalog.

Pomona Manufacturing Company

Makers

Pomona, California

IRRIGATION MADE CALIFORNIA.

California is today recognized as the garden of the world, devoted most exclusively to fruits, producing as it does nearly all known varieties of the temperate and semi-tropic zones.

The apple is here produced in perfection, and beside it we find that the orange and the lemon mature in a way that is unsurpassed by the fruits of any other country in the world, while the Muscat grape produces a raisin that is not outranked by the raisin of any other climate.

Originally California was a grazing State, where long-wooled sheep and long-horned cattle roamed over the plains in company with bronco horses, unmolested by the trains of commerce and unobserved by modern civilization.

In a natural state, California was a desert country, except that along some of the streams there was a strip of moist land that could be depended upon with more or less regularity every year for a limited amount of feed, and in some localities there were limited areas of moist and cienega lands, which were considered as oases, when food and water failed in the country at large.

In wet seasons the plains were covered with alfilarilla and other native forage plants, and the flocks and herds flourished; but in dry seasons the bones which were strewn over the plains told too plainly that the stock business had been overdone and that the country was a failure for sheep, cattle and horses, because there was more loss in dry seasons than there was gain in the more favorable ones.

As an aid to stock-raising, the sowing of grain was practiced on the plains, but this, too, was an extra hazardous undertaking, and failure was more frequently met with than success in many localities.

With these uncertain industries for the people to depend upon, civilization was at a low ebb, and the wheels of progress appeared to turn backward about as much as they did forward.

Aside from the old missions, which had been established many decades ago, churches were almost an unknown quantity, and the schoolhouse was the exception to the rule, and when found it was of a primitive and inferior character.

Southern California, under the old regime, before the introduction of irrigation on a large and intelligent scale, was a failure, and modern civilization was making no headway.

Two or three decades ago American enterprise and Yankee push got a foothold and began to look around for a programme for developing the natural resources of the country. Enough had been done in a crude way to establish the fact that, as a fruit country, this could be made a success, at least in a limited way, but the systems of irrigation were precedent conditions to the establishment of orchards and vineyards, for without water artificially applied, fruit culture must be a failure.

Gradually the streams were turned out of the beds, and the waters thereof were spread out over the arid lands. Trees and vines were planted. The home fruit markets were supplied, and avenues were opened for shipping the surplus crops of the country. Railroads were built to carry the passengers and freight. The demand for our superior fruits from the outside world grew more rapidly than did our trees and vines. Prices were good, and our people made money.

When writing advertisers mention Cultivator

QUALITY OF IRRIGATED APPLES.

There is a feeling in the public mind that apples and other fruits grown under irrigation are not equal in quality to the same kinds produced where this method of supplying moisture to the soil is not necessary. I am not fully prepared to positively deny the truth of this theory, but many opportunities that I have had to compare fruits of many kinds grown under the two conditions leads me to believe that it is the abuse of irrigation that is largely responsible for the poor quality of much of that which is not up to the standard in this respect. Again, the lack of sufficient water in the soil has the same effect, although the condition is reversed—that is, from too much water or too little.

In the former case there is an overplus of moisture in the soil, which is an abnormal condition and may result in very large fruit poor in quality, while the opposite abnormal condition—that is the want of sufficient moisture to enable the tree to properly develop its fruit—makes it poor in quality. Nature requires about certain proportions of light, heat, moisture and plant foods to bring its products to perfection and when this balance is disturbed by untoward climatic conditions or unwise interruptions by man a penalty will follow as sure as one and one makes two. We see apples in some of the irrigated regions grown under conditions of excessive soil moisture which are large and showy but poor in flavor.

On the other hand, small woody apples, dry and lacking in richness have resulted from insufficient or untimely irrigation, or lack of normal rainfall in the humid regions. Therefore, it seems reasonable to lay the blame for poor quality of apples as well as other fruits to the abuse of irrigation rather than to the fact that they were grown under irrigation. I have eaten just as good apples grown by irrigation in our western states as those of the famous apple growing regions of the east and I have caused many persons who were experienced and well posted in flavor and other qualities of apples to make comparative tests of specimens from these distant sections grown under the two conditions. In almost every case the prejudice against irrigation, if any existed, was removed.

Prof. H. E. Van Deman.

IRRIGATION METHODS.

In the countries where rainfall is small and droughts consequently frequent, irrigation, the art, for such may it be termed, of increasing the fertility of the soil by artificial water supply, assumes an important character. Ruins of ancient irrigation works are still to be found in Egypt, India and China, those of the first mentioned country being particularly numerous. The irrigation farmer of today could learn a few good lessons by studying the methods that were in vogue in ancient times to give each owner of land an adequate supply of the water.

LOSS BY EVAPORATION.

Evaporation annually deprives the California farmer of a large amount of water which he might utilize to good advantage. By this process water is withdrawn from the surfaces of storage lakes and reservoirs, irrigation canals, and flooded fields. By the same process moisture is continually passing from the surface of fields, whether irrigated or farmed dry.

20 Reasons WHY THE Addison Pump

Is Better Than All Others

1. It will pump more water with less power.
2. It is more substantially constructed.
3. Has no overhanging bearings to spring and cause friction.
4. Absolutely uniform—does not break rods.
5. Plunger leather can be changed with less trouble and expense.
6. Water discharge in continuous stream—no pulsations.
7. Noiseless in operation.
8. Has no jar or hammer.
9. Perfectly balanced, no braces are required to keep pump in position.
10. Will be in good working order when other pumps with erratic or variable motion are in the scrap pile.
11. The frame contains within itself the main bearings, which are unusually large.
12. The cranks consist of three gearwheels, pinned on opposite sides, thus forming a double crank.
13. The outside gears are shrouded on the inside and the center gear on both sides. The pinions are placed on two counter-shafts in main frame in such a manner that the shrouds of the gears rest on the shrouds of the pinions, forming a bearing to carry the load when pumping, and thus keeping the teeth in proper mesh, giving the greatest strength and least wear and distributing the weight over six boxes.
14. The pitman rods are of the same length and are forged from one solid piece of best machine steel.
15. The driving and countershafts have only 22 inches between the bearings which carry the load, and with the size of shaft used makes it impossible to swing out of line, under the heaviest of work.
16. The cross-heads are planed and fitted with tempered brass strips made to fit groves in columns; so arranged that wear can be taken up.
17. Both pump rods are fastened to the cross-head pins, so there is no pulling strain on the cross-head proper.
18. By our specially constructed couplings, rods are as strong at joints as at any other part.
19. The Addison Patent Straight-Waterway Valves offer a free passage for water, causing less friction than in any other valve.
20. Pump can be operated without a stop as the following testimonial proves:

Addison Pump Co.,
Pomona, Cal.
Gentlemen:—

In reply to your inquiry of Dec. 24th., I am glad to say that your pump has now worked steadily for over two years with entire satisfaction.

As far as I can recall it has never had to be repaired, and has never missed a stroke.

Very truly,
J. H. McBRIDE.

Pasadena, Cal., Dec. 28, 1906.

If you will come to Pomona and spend a day with us we will show you our pump and other pumps in operation, then leave it to your own judgment to select the best.

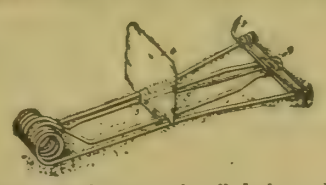
We give an iron clad guarantee with every plant.

IT WILL PAY YOU TO INVESTIGATE THE ADDISON BEFORE PURCHASING A PUMP.

Send for Catalogue B.

Addison Pump Co.
Cor. 1st and Cypress Sts., Pomona, Cal.
Phones: Home 91
Sunset, Black 1551

MACABEE GOPHER TRAP



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Comfort Shoes
are made for genuine comfort. It is a pleasure and relief to wear them. There are no buttons to button or laces to lace. You just slip them on and off at will.
The elastic at the sides expands and contracts with the natural motion of the foot, insuring perfect ease and comfort. Can be worn all year round.
Three styles, low, medium and high. Your dealer will supply you. If not, write to us. Look for the name and trade-mark on the sole.
We also make the popular "Western Lady" shoes.
FREE Send the name of a dealer who does not handle "Martha Washington" shoes and we will send you free, postpaid, a beautiful picture of "Martha Washington," size 15x20.
F. Mayer Boot & Shoe Co.,
Milwaukee, Wis.
MILWAUKEE F.MAYER B&SCO CUSTOM MADE
TRADE MARK

Western Branch—Washington Shoe Mfg. Co., Seattle, Washington

Town, Country and Suburban Homes

Can enjoy even Better Lighting Facilities than the city affords by using

Perfection Acetylene Generator

The only machine having a perfect feeding device. The only machine sold on trial to responsible parties. No matter what your experience has been with other machines, you can try this machine without money until satisfied. All machines sold with a positive guarantee.

Crayton Manufacturing Co. (Inc.)
Eastman Block **Long Beach, Cal.**
Agents Wanted in All Parts of U. S. Write for Particulars.

Largest National Bank West of Denver and South of San Francisco

First National Bank

United States Depository for Government Funds

TOTAL RESOURCES, $20,000,000

ADDITIONAL ASSETS—One Million Five Hundred Thousand Dollars invested in the stock of the Los Angeles Trust Company and the Metropolitan Bank and Trust Co., and held by the officers of the First National Bank, as Trustees, in the interest of the shareholders of that Bank.

We are prepared to extend to the small depositor the same personal and careful attention that we do to our largest accounts.

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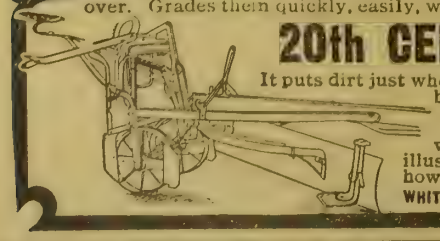
HOW MUD ROADS MAKE GOOD ROADS

Level those mud heaps, raise up the center, make the rain drain off to the sides instead of soaking in. Then your clayey, nasty roads will be smooth and pleasant to haul over. Grades them quickly, easily, with a



20th CENTURY GRADER

It puts dirt just where needed. Easily guided and handled by one man, simple to understand. Reversible either way to 50 degrees. Made of steel; strong, rigid. Very popular with cities and townships. Our free new illustrated book "Delightful Roads" tells how to make them. Send for it now.

WHITE CITY GRADER CO., BOX D, WHITE CITY, KAN.

When writing advertisers, mention Cultivator.

Household Department

LITTLE BOY BLUE.

The little toy dog is covered with dust,
But sturdy and staunch he stands;
And the little toy soldier is red with rust,
And his musket molds in his hands.
Time was when the little toy dog was new
And the soldier was passing fair,
That was the time when our Little Boy Blue
Kissed them and put them there.
"Now don't you go 'till I come," he said,
"And don't you make any noise."
So toddling off to his trundle bed
He dreamt of his pretty toys.
And as he was dreaming an angel song
Awakened our Little Boy Blue—
Oh, the years are many, the years are long,
But the little toy friends are true.
Aye, faithful to Little Boy Blue they stand,
Each in the same old place,
Awaiting the touch of a little hand,
The smile of a little face.
And they wonder, as waiting these long years through,
In the dust of that little chair,
What has become of our Little Boy Blue
Since he kissed them and put them there.—Eugene Field.

HIS ANCHOR.

A YOUNG man trudged with a sprightly step along a dusty road. A farmer passed him and looked back. The stranger was not of the cut that was usually seen walking in those parts, such persons preferring an automobile or a carriage. Not that his clothes were especially fine; it was something in the general appearance of the young man himself.

Climbing a stone wall, he entered a wood, mounted a slight rise in the ground, then descended to a small artificial lake and crossed a rustic bridge. While leaning over a guard rail looking at some water lilies he heard a woman's voice coming from behind him:

"Strangers are not admitted to these grounds, sir."

The man turned and saw a very pretty girl shading her eyes with a red parasol from the autumn sun. Raising his hat, he replied:

"I saw no prohibition notice as I entered."

"If you had entered by the gateway, you would have seen one."

"But I didn't enter by the gate."

"For that reason I have spoken to you. Persons coming in here socially or on business don't climb the wall."

"I'm sorry to have trespassed. By your speech I judge you own the place."

"My father rents it."

"That makes him and his family owners so far as occupying it exclusively for themselves is concerned. Don't you think it a bit selfish in you to begrudge a poor traveler the pleasure of resting in the cool shade?"

"Should we do so we would be overrun. Besides, they pull things to pieces. We are especially anxious to keep it in good order just now, for our lease is about to expire, and we wish to turn it over to the owner in first-class shape."

"A very exacting person, I presume?"

"Oh, no; it is we who are particular. Mr. Chichester concerns himself very little about it."

"Chichester? What Chichester?"

"Robert, I believe."

"You don't mean it? Bob Chichester! I know him well."

The girl cast a suspicious glance at the stranger.

"You think I am imposing on you. I will describe Chichester and prove to you that I really know him."

"That wouldn't avail anything, for I never saw him myself."

"You know that he has been a student at Oxford, England?"

"Yes, I know that."

"Well, we both, being Americans, knew each other. But I didn't fancy him."

The girl's eyes flashed.

"Unluckily he is not here to return the compliment."

"Oh, I can do that for him. His opinion of me is my opinion of him."

"Superior persons are usually disliked by their inferiors."

"Bob Chichester isn't my superior," he said with remarkably good nature, "We're two of a kind—a pair of knaves."

"Knaves always consider other persons knaves. Perhaps that's the reason of your opinion of Mr. Chichester."

"And the reason of his opinion of me."

"I have only your word for that, and since you confess yourself a knave I give that for it." She snapped her fingers viciously.

"May I ask a reason for this defense of a man you have never seen?"

The girl hesitated. She knew the folly of chatting thus confidentially with a stranger, but being interested in defending the landlord she threw caution to the winds.

"Since renting this place my father has had nothing but misfortune and is unable to pay the whole of a year's rent due. He wrote, or rather, I wrote for him, a full statement of the matter to Mr. Chichester, who replied with unbounded generosity, inclosing a receipt for the amount."

"Oh, you were the writer of that letter?"

"Mr. Chichester must be a confiding person to have shown it to"—

"A knave. Certainly. Didn't I tell you we were both knaves? You see, Chichester and I are a sort of Dr. Jekyll and Mr. Hyde. It was I who prompted him to write that letter."

"Well, I declare!"

"Fact. Bob declared he wouldn't do it; vowed he'd sue the account although you said such a course would bring down a multitude of creditors on your father. I shook my fist at him and told him"—

"Stop!" She stood looking at him like a fury. "Leave these grounds."

"I decline to be ordered off my own property."

"Your own property?"

"Yes, I own this place, and when I received that letter I resolved that I would come home and do my best to become the owner of the woman who could write such a letter."

She stood staring at him in a sort of dazed wonder. He advanced and put out his hand. She made no move, and he went on rapidly feeling for hers at the same time:

"You see that I have given you a correct picture of myself; mean inclinations and noble aspirations; bad one day, good the next. All I need is a sheet anchor to hold me to the good. When I read your letter I knew I had found the anchor. It only remains for me to secure it."

F. A. Mitchell.

JAPANESE FRIENDSHIP.

Mr. Dooley's latest essay discusses the Japanese question, under the title, "A Broken Friendship." It is in the pholosopher's rich vein of wit and humor, as the following extracts prove. Dooley talks like a Native Son, and California should adopt him.

"We're sure to have war with th' Japs inside iv two years," said Mr. Dooley. "Hogan says we're got to fight f'r th' supreemacy iv th' Passyfic. Much fightin' I'd do f'r an ocean, but havin' taken th' Phil'lippeens, which ar-re a blamed nuisance, an' th' Sandwich Islands, that're about as vallyble as a toy balloon to a horseshoer, we're got to grab a lot iv th' surroundin' dampness to protect thim. That's wan reason why wer're sure to have war. Another reason is that th' Japs want to sind their forty-five-year-old childher to be iddycated in th' San Francisco public schools.

"Wud ye iver have though 'twas possible that any wan in this country cud even talk iv war with thim delightful, cunning little Orientals? Why, 'tis less thin two years since we hollowed with joy whin a Rooshyan admiral put his foot through th' bottom iv a man-iv-war an' sunk it. An' how we cheered in the theayter to see th' cute little sojers iv th' Mickydoo mowin' down th' brutal Rooshyan moojiks with masheen guns. An' fin'lly whin th' Japs had gone a thousand miles into Rooshyan territory an' were about busted an' ayether had to stop fightin' or not have car fare home, our worthy Prisiden jumped to th' front an' cried: Boys stop it. It's gone far enough to satisfy th' both iv ye.'

Day afther day th' pa-pers come out an' declare that th' defeat iv Rooshya was a judgement iv' th' Lord on th' Czar. Hogan talked about nawthin else. They were a wondherful little people. They cud shoot straighter an' oftener thin anny other nation. A Jap cud march three hundhred miles a day f'r eight days with nawthin' to eat but a gumdhrop. They were highly civvylized. It was an old civvylization but not tainted be age.

"Their threatment iv women put thim on a higher plane thin ours. Chinchries ago, befure th' higher iddycation iv women was dhreamed iv in this counthry, th' poorest man in Japan cud sind his daughter to a tea house, which is th' same as our female siminaries, where she remained till she gradyated as th' wife iv somepround noble iv the old Samuri push. An' even in th' wan branch iv art that westhern civvylization is supposed to excel in they had us beat miles. They were th' greatest liars in th' wurrld an' formerly friends iv th' President.

"That was th' beginnin' iv th' end iv th' frinship between th' two gr-reat nations. A well-known fi-nancier who thraveled to Tokeoo with a letter iv inthraduction to th' Mickydoo fr'm th' Prisident beginnin,, 'Dear Mick,' got a brick put through his hat.' A little later a number iv Americans in private life who wint over to rayceive in person th' thanks iv th' imprer f'r what they'd done, were foorced to th' warmth iv their rayciption to take refuge in th' house iv th' Rooshyan counsel.

"Last month th' Jap'nese governmint wrote to th' Prisident: 'Most gracious an' bewilderin' Majesty, Impror iv th' Sun, austere and patient, Father of the Stars, we adore ye. Had ye not butted in with ye'er hivinly binivolence we wud've shook Rooshya down f'r much iv her hateful money. Now we must prove our affection with acts. It is our intintion to sind a fleet to visit ye'er shores, particklY San Francisco, where we undherstand th' school system is well worth studyin.'

"An' there ye ar-re Hinnissy .Th' frindship ceminted two years ago with blood an' beers is busted. I don't know whether annything will happen. Hogan thinks so, but I ain't sure. Th' Prisidint has announced that rather thin see wan octoginaryan Jap prevented fr'm lrrnin his a-bee-abs, he will divastate San Francisco with fire, flood, dynnymite, an' personalities. But San Francisco has had a pretty good bump lately an' wud hardly tur-rn over in its sleep f'r an invassion and if the Prisidint want thim to enther th' schools he'll have to load thim in th' cannon an' shoot thim in.

"Wudn't it be th' grand thing though if th' licked us an we handed thim th' Ph'lippeens!"

" 'Your wife is in rather a bad way. He hesitated. Then he went on solemnly: 'Do you want to know the worst?'

" 'Certainly,' said the husband, 'certainly. Tell me the worst—is it to be Palm Beach or the Riviera?' "

AMONG THE MIZ'N.

George held her hand and she held his'n,
And then they hugged and went to kiz'n,
They did not know her pa had riz'n—
(Madder than hops and simply siz'n,)
And really tiz'n right to liz'n,
But George got hiz'n and went out whiz'n.

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5th. Twenty-five Dollars Cash.
Next 5. Ten Dollars Each.
Next 10. Five Dollars Each.
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AWARDS will be made as follows—The person giving correct or nearest correct count will get first prize. Next nearest second, etc.

$50 PRIZES—We believe everybody should have three counts so they can have one each side of what they think is correct to be more sure to hit it. To encourage this we will give $50.00 extra to winners of 1st prizes if they have three counts. Remember if you have one count you get piano only, but if you have three counts you get $50 extra.

TIME PRIZES—$25.00 Extra. We feel early counters should be rewarded and we will give $25.00 to the person sending best answers by Feb. 28th.

OUR RESPONSIBILITY—We are a responsible business house, and every prize must be and will be paid as stated. We refer to Iowa National Bank, Central State Bank, German Savings Bank; in fact any Bank, Express Company, business house or individual in Des Moines, as well as Dun or Bradstreets Agency, or the publisher of this paper.

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TO WHOM IT MAY CONCERN: We have been asked by the publishers of SUCCESSFUL FARMING to act as judges in their contest and see that prizes are all awarded fairly. This we will gladly do guaranteeing each contestant absolute fair treatment. Signed—W. W. MORROW, Treasurer State of Iowa; HUGH BRENNAN, Judge District Court; Rev. A. J. WILLIAMS.

In case of tie we will write each person so tied asking them to make as few words as possible from the letters of the alphabet, using each letter of the alphabet twice and only twice, and no one word more than once, each letter left over counting as one word. To the one tied in the counting who gives us the fewest words as above will be awarded first prize. This practically eliminates all question of tie, but if there should by any possibility be a tie in this the prize will be divided equally between those so tieing.

Subscription without counts is 25 cents per year, additional counts after you have three entered as per our terms in paragraph "condition" above may be entered at 25 cents each.

This contest is not to be confused with the guessing or estimating contests. Our contest is a test of skill in planning and counting and the best man wins. Nobody connected with our paper will be allowed to compete. Contest closes June 30, but get your counts in at once. See about time prize above.

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W. C. ELLIOTT, Audubon, Iowa.

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AMY R. BARNES, Van Horn, Iowa.

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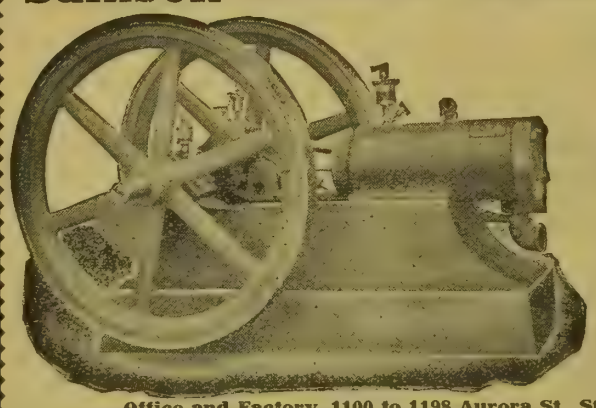

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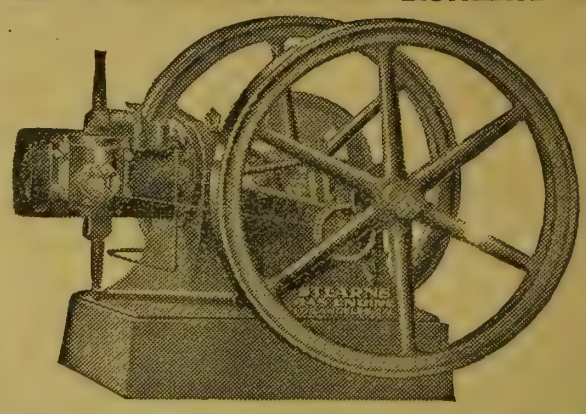

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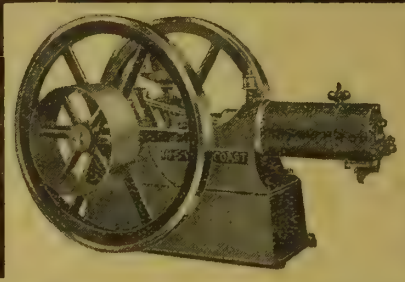

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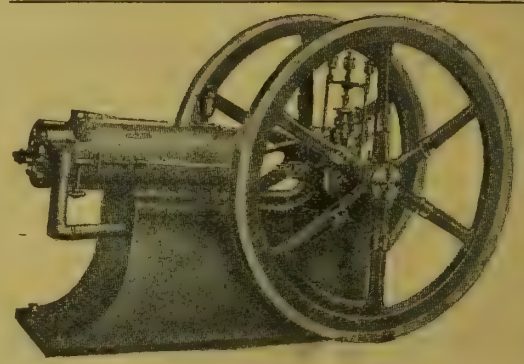

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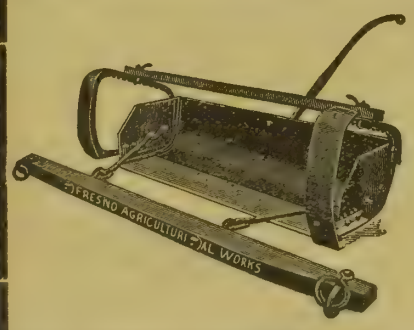

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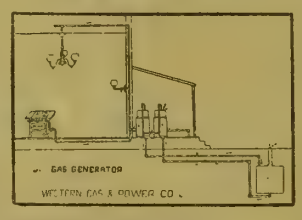

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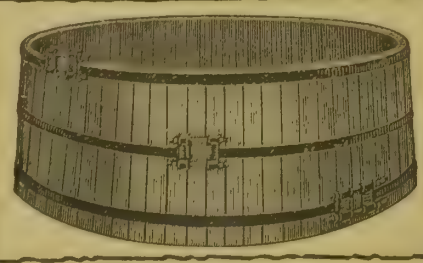

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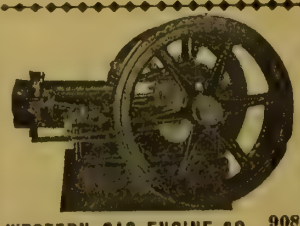

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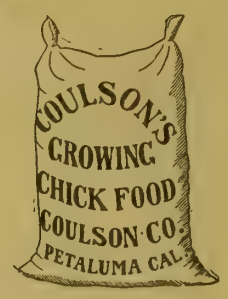

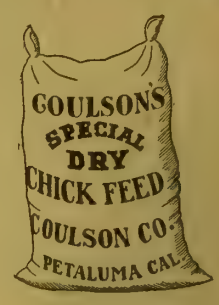

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Petaluma, California

California Cultivator

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Observations on the Liming of Soils

Based Upon Exhaustive Experiments Made During the Past Few Years at the Maryland Agricultural Experiment Station

By H. J. PATTERSON, College Park, Maryland.

THAT lime was one of the earliest materials used for improving the productiveness of the soil is evidenced by the writing of Pliny and Cato. It was used in this way probably two or three hundred years B. C. That chalk and marl were quite extensively used at an early period in Southern Europe is shown by the notes of Varro, taken during the march of his army to the Rhine. The contributions of Ruffin in the "American Farmer" as early as 1818, show that the agricultural use of certain forms of lime took a prominent place in the agriculture of the United States early in its history.

Although lime was thus used early in the history of agriculture, and has been used to a greater or less degree in all parts of the agricultural world ever since, yet the nature of its action on the soil is but little understood and has been but slightly studied. Almost every one recognizes the fact that there is a great difference in the action of lime on soils of different characters. That there is a difference between the action of limes of different character and composition on the same soil is a point seldom noticed.

Lime Used in Agriculture.

Good lime-stone contains from 50 to 55 per cent. lime (CaO,) and 40 to 45 per cent. Carbonic Acid. with small amounts of magnesia, silica, iron and aluminia. Such lime, when burnt, would produce the best quality of caustic or quick-lime, and would contain from 90 to 98 per cent. of Calcium Oxide (CaO.) Freshly burned lime, when removed from the kiln, will weigh about 90 or 95 pounds to the heaped bushel, and will slake about three bushels for one in volume.

Magnesia lime-stone, or dolomites, are quite varied in their composition, and may range in Carbonate of Lime from 20 to 80 per cent. and in Carbonate of Magnesium from 10 to 60 per cent. The average of such lime-stones used in agriculture, when burned, will produce a lime containing from 70 to 85 per cent. of Calcium Oxide and 5 to 20 per cent. of Magnesium Oxide. Magnesia lime weighs about 75 to 85 pounds to the heaped bushel, and will slake about two bushels for one, by volume.

Oyster shells contain 90 to 95 per cent. of Calcium (lime) Carbonate, and will produce, when burned, a comparatively pure lime, which should contain from 85 to 95 per cent. of pure Calcium Oxide if it has not been excessively contaminated with impurities and the ashes from the fuel in burning. Freshly burned oyster shell lime weighs about 60 pounds per bushel, and will slake out a little better than two for one by volume.

Quick lime is used at the gas works for removing the impurities of the gas. After it has been saturated with impurites, and no longer fit for use in gas making, it is sold for agricultural purposes under the name of gas-lime. This article varies considerably in composition, but consists essentially of the hydrate, carbonate, sulphate, sulphites of lime. The sulphides and sulphites of lime are injurious to germinating seeds or young and tender plants, so that gas lime should be applied cautiously, and when not too fresh. The action of the air on sulphides and sulphites changes them to sulphate of lime (gypsum or land plaster:) hence the exposure of gas-lime to the weather for some time improves its agricultural qualities. Average gas-lime contains about 22 per cent. water, 43 per cent. lime (CaC,) 21 per cent. Sulphuric Acid (Oil of Vitriol,) 8 per cent. Magnesia, and 6 per cent. insoluble matter. Of course this will vary considerably according to the character of the lime used, and the amount and nature of the impurities. The gas houses in Baltimore and Washington, D. C., use mostly oyster shell lime, and the gas lime from such lime would contain very much less Magnesia than indicated by the average figures. Gas-lime is usually sold at 65 pounds per bushel.

Gypsum or Land plaster is a combination of lime with Sulphuric Acid (Oil of Vitriol) forming sulphate of lime. It occurs in nature in large deposits forming beds of rock. These are comparatively easily mined, and the rock is ground to a fine powder for commercial purposes. It varies in color from white or yellow to gray. Gypsum or sulphate of lime is formed artificially in the manufature of phosphoric acid and phosphates, by treating the phosphates of lime with sulphuric acid, and a considerable amount of gypsum is necessarily used in agriculture in using dissolved bone and dissolved rock. Average gypsum contains about 32 per cent. Calciun Oxide (CaO.)

Chemical Action on Soils.

One of the most important chemical changes brought about in a soil through the action of lime is the decomposition of minerals, particularly the disintegration of refactory silicates. Such action as this would generally be produced more easily by caustic or quick-lime than by any other form. Lime materially aids in the formation of double silicates of alumina, which have an important influence on the fertility of the land. Double silicates of alumina may be described as silicates of alumina in which part of the alumina is replaced by lime, soda, potash or ammonia.

Most farmers are aware that ammonia is more valuable than potash, whilst potash is more valuable than soda and soda is more valuble than lime. The double silicates of alumina, when once formed seem to recognize this, and exercise a similar order of prefcrence. If a silicate of alumina and lime exist in the soil and should be brought in contact with soda, some of the lime will be given up and the soda will replace it, resulting in a silicate of alumina and soda.

The presence of the lime will not enable it to replace the soda, as the silicate of alumina prefers the soda to the lime. If, however, potash be added, the soda is given up and potash taken into the combination, because the silicate of alumina prefers the potash.

But if ammonia comes within the influence of this compound it will replace either the lime, soda or potash, and silicate of alumina and ammonia would be formed. These double silicates are in such shape as to be lost from the soil by leaching, yet are in a readily available condition for plants. From this it will be seen that it is desirable to promote the formation of double silicates, and caustic lime seems to have a decided action upon clays in starting and bringing about the formation of this most desirable class of bodies.

Combinations With Lime.

Lime has not only the effect of aiding in the formation of unions of potash which will be held in the soil, but it also has the ability to liberate potash from combinations which are locked up and unavailable to plants. This is particularly marked when lime is applied to land containing fragments of feldspar. Gypsum is particularly useful in rendering potash available, and the sulphate of lime in dissolved phosphates often have an indirect value in this way.

Lime also favors the production of nitrate of potash in the soil. This is particularly true when lime is used on soils receiving considerable stable manure. The process and changes involved are exactly similar to those which have been employed in many places for the production of nitrate of potash (Nitre) for use in the manufacture of gunpowder, and for which a prize was awarded by the French Government to Mons. Thouvenel in 1776.

Lime hastens the decomposition of organic matter and inert nitrogen compounds of humus in the soil, and promotes the formation of ammonia and nitrate compounds from the same. It also, as has been seen above, aids in the formation of compounds not easily removed from the soil. Lime promotes nitrifying ferments and makes possible their existence in many cases that would be impossible without its presence.

Lime produces particularly good results if applied after using green manures, as it acts chemically and unites with some parts of the organic matter and leaves the remainder in a disorganized condition which rapidly decomposes. It is, perhaps, this tendency to destroy organic matter that makes the frequent use of lime pernicious. All evidence teaches us that lime is no substitute for manure but only a reinforcement of it. No doubt much land has been reduced to the verge of sterility by applying lime continually until all the organic matter has been used up. Such procedure is probably responsible for the old proverb, "Lime enriches the father but beggars the son."

If a soil contains much phosphoric acid, combined with iron and alumina which is relatively inert, an application of lime will change it into a form available to plants. Lime applied to soils which have received or will receive applications of dissolved phosphates, will not produce any harmful results or cause a loss of the phosphoric acid. It may hasten the reversion of the soluable phosphoric acid, but the phosphoric acid will still be in an available condition. In the average soil this reversion takes place anyway within twenty-four hours after applying the phosphate.

Most cultivated soils possess a slightly acid reaction. This is generally due to decomposition of the remains of plants in the soil, forming organic acids. On wet soils this condition is more

(Continued on Page 165.)

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Deciduous Fruit Culture

By J. W. MILLS

PEACH LEAF CURL.

PEACH LEAF curl is a fungous disease, the germs of which infect the trees in two ways. The spores from the fruit of the fungus fall upon the buds just as they open and of the weather is favorable to their growth, they sprout and the tree has the "curl leaf." This form is easily killed by spraying and if it were the only means of infection, there would be some hopes of eradicating it.

The myrlium form, is what makes it, so far as we know, next to impossible to eradicate the disease. The myrlium is that part of the fungous growth which grows within the tissue before the disease is visible to the naked eye. This might be compared to the underground root-stock of some plants that grow from year to year, but on which the top dies down into the ground each year. When the proper season comes around again, it springs up from below and if not killed will immediately spread its seed broadcast.

This form of the curl leaf lives under the bark of the leaf buds, and as the young leaves start, this myrlium grows into the tender leaf and the curled abnormal growth is the result. Spraying will not kill this inside growth that the fungus makes under the bark of the buds, but it does kill the spores that lodge on the leaves and that form is easily killed by spraying. This form causes most of the curl leaf, and while the other form contributes but slightly in a direct manner to the malady. It serves as a holdover that furnishes seed for a new crop.

Curl leaf is much worse some seasons than others and some varieties of peaches are practically immune from the disease. When the spring weather is very wet, with considerable cloudy weather, the curl is always bad unless prevented by spraying. Scientists explain that this is so because the sap flows into the trees with undiminished force, while the evaporation being much reduced, less of the water in the leaves is thrown off and thus they become more "sappy" and tender. This is the condition favorable to the growth of the curl leaf fungus. Thus it is that cool, wet springs are most favorable to the ravager of this disease.

Briggs Red May, Alexandria, Tuscan Cling and a few other varieties are practically free from the disease.

Several kinds of spray materials have proven effectual remedies for the disease. Eau Celeste is an effective wash if used when the trees are dormant, but will turn the foliage. For summer washes to catch any stray spores that may escape the winter spray, Bordeaux mixture is the best. Eau Celeste is made by dissolving 2 pounds of sulphate of copper (bluestone) in six gallons of water; add three pints of strong ammonia, mix thoroughly and make up to 45 gallons with clear water.

Perhaps the best spray is the lime salt and sulphur wash. This is made with 20 pounds of sulphur and 20 pounds of freshly slacked lime, boiled till it is well dissolved and mixed. This takes about an hour and a half. Add 20 pounds more of the lime and 15 pounds of stock salt and boil for another half hour; make up to 100 gallons. Use the material right out of the boiler as fast as made.

This material may be used with safety on deciduous trees as late as a week before blossoming time. In fact it may be used when the color of the blossom can be seen in the buds. It is not safe, however, to put off spraying so late when many trees are to be treated.

Fellow Passenger—Pardon me, your necktie has been sticking out for some time. I refrained from telling you sooner because those young ladies seemed so much amused.

Farmer—Thankee; an' the oil from that lamp has been dropping on that light overcoat o' yourn for the last ten minutes; but every one seemed so tickled that I hated to spoil the fun.—

The farmer whose son is a bootblack, believes in making hay while the son shines.

SPRAYING A TREE.

Quite as important as the material used is the method of application, for spraying must be done thoroughly, and it is false economy to be too saving of the spray.

Do the inside spraying first, and then, beginning at the top, apply the overshot or outside spray. Do not finish the sides and bottom until the top is thoroughly sprayed. The men should walk completely around the tree, and spray directly at it from all points. Do not try to spray around a corner. Before leaving any part of a tree the men should stand well back and spray the tips of the most extending branches.

The orchardist should insist on the tops of the trees being sprayed first and thoroughly. If the upper work is done well the lower branches will receive almost enough spray from the drip, and they can then be finished quickly, thus avoiding the greater drip loss which comes about through beginning at the bottom.

In summer spraying material should not be wasted on the trunks and large limbs free from foliage.

The Spraying Outfit.

Use a power outfit equipped with a mechanical agitator where practicable and maintain a pressure of 140 pounds or more. For large trees long extension rods should be used, as the tops can not be well sprayed without their use. The nozzles are also a matter of considerable importance, and the type varies with the character of the spraying to be done. Bordeaux nozzles are best when the spray contains coarse impurities, but for ordinary work those of the cyclone type are the superior.

The lime, salt and sulphur spray prepared by the old formula usually requires a Bordeaux nozzle, but the new formula, and the commercial lime sulphur spray, should be as readily run through long-distance Bean nozzles as are the summer washes. It is well to use a battery of two or three nozzles on each extension rod in order to increase the volume of spray handled by each man, for with a large volume of spray the time required to thoroughly spray a tree is much reduced, and hence the labor becomes less expensive.

Caterpillars.

The tent caterpillars are readily controlled by arsenate of lead, and no attention need be paid to them if the regular codling moth spraying schedule is followed out. Where this insect is to be treated separately use 1½ pounds of arsenate of lead to 50 gallons and spray lightly. Experiments this year show that apricot, cherry and other trees may be successfully treated for tent caterpillars by the use of this spray.—W. H. Volck.

SPRAY FOR CODLIN MOTH.

The First Spraying.

Use 2 to 2½ pounds of arsenate of lead to 50 gallons of 5-6-50 Bordeaux. Apply when the majority of the blossoms have fallen. That is from April 25th to May 10th, approximately.

The Second Spraying.

Use 1½ to 2 pounds of arsenate of lead to 50 gallons of 4-6-50 Bordeaux. Apply about the last of May or one month after the first spraying.

These two sprayings should be thoroughly applied, and will furnish the best possible protection against the attacks of worms and scab likely to occur at this period.

The Third Spraying.

Use 2 pounds or arsenate of lead to 50 gallons of water. Apply between the 10th and 25th of August. These three sprayings are deemed sufficient to control the codlin moth in the valley orchards.

In the hill sections, where worms are more abundant, the second spraying should be applied about the middle of May.

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OLIVES FROM SEEDS.

Propagating olive trees from seed is very tedious, and requires extraordinary care. The pits are quite hard, often requiring from one to two seasons to germinate. The raising of olive plants from seed is the most natural method, and the one producing the most healthy and robust trees, the roots being more symmetrical; but as the plants make slow growth the first few years, a longer time is required to grow trees by this method than by any other. Trees grown from seed seldom produce fruit in less than eight years, and the plants must be at least two years old before they can be budded or grafted.

Those intending to plant pits should carefully select those from varieties having perfect kernels. It is not necessary that the variety from which the pits are taken for planting be one possessing high qualities for pickles or oil, because all fruits when grown from seed have a tendency to revert to the wild type, or become of a modified type, entirely distinct from the parent tree; but it is important that the tree be of a thrifty sort. Seed from dwarf trees should be avoided, as they produce plants of a still smaller habit.

The seeds, having been freed from the pulp, are washed in water containing some lye or ashes, to remove all the oil adhering to them; they are then washed in clear water, and, after drying in the shade, are mixed with moist sand and kept in a moistened condition till spring to be then sown. The use of lye is necessary to render the shell of the pit a little less compact, in order that it may be penetrated by moisture. The lye roughens the shell and thus gives access to humidity.

The sowing is done in February or March. As olive seeds do not all germinate the first year of sowing, it is advisable not to destroy the seed-bed until the end of the second year. Olive pits often continue to germinate in certain quantities for over two years. In order to hasten germination pits may be advantageously split by use of an iron vise. The longer part of the pit is placed between the jaws of the vise, and by turning the screw the shell is split. It is not necessary to take out the kernel; on the contrary, it is better to leave it in the cracked shell.

The seeds are sown in ordinary seed-boxes, with bottoms perforated to admit of good drainage. The boxes are then filled with fine earth (sandy loam) to within three inches of the top; the kernels are spread on top of this and covered with one inch of sand. The boxes are kept moist and shaded for awhile. This method obviates the necessity of soaking the pits in lye to deprive them of their oily coverings, and a person can easily prepare some six hundred or more kernels in a day.

FURROW IRRIGATION.

Fields and orchards are irrigated by furrows in many different ways. Usages that are suited to one locality may not be to another. Therefore any recommendations to apply this system to particular crops can be made only in general terms. With this in mind one may state that furrow irrigation is the best for the large majority of all orchards and for all root crops and vegetables.

It may also be adopted not only for the crops named, but for grain and forage crops when the available supply of water is small. The weak feature of this method, as now practiced, is the connection between the head of the furrow and the earthen ditch. The use of short tubes, or some other equally serviceable device, to divide the flow of the ditch equally among the furrows is strongly recommended. Were this custom made more general, it would greatly extend the area watered by furrows.

THE BORED BOARDER.

"I waited ten minutes for a car today," the landlady was saying, "and then it passed me without stopping."

It was afterward recalled that the habitually silent man had been having unusual difficulty with his chops.

"Perhaps," he remarked, "the conductor didn't care to have you board his car."

KUMQUATS IN FLORIDA.

A number of kumquats on rough lemon stock planted on rather moist ground have come under personal observation in which it was found that there was a more or less copious flow of gum from the region just above the union of the stock and coin. In all cases where this occurred it appeared that the cion was the only part affected. The trees were in an unhealthy condition. The diseased condition, if we may so designate it, did not appear to be mal-di-goma, though in some respects it resembled it. The trouble may have been due to the fact that the great foraging power of the roots enabled them to collect, in certain soils, more food than the less rapidly growing top could readily assimilate.

On the other hand, on soils containing less moisture and presumably less fertility, a number of trees budded upon rough lemon roots have been examined which were vigorous and perfectly healthy. If one desires to use the rough lemon stock for the kumquat on some soils the best plan would be to adopt the practice to insert kumquat buds in sprouts from rough lemon roots which already support and feed a sweet or mandarin orange top. A perfectly healthy union is secured in all cases as most of the food gathered by the roots is used by the larger and more vigorous top. Strange to say, however, the kumquat frequently outstrips the other top, sweet or mandarin orange as the case may be, in growth in height.

For the northern part of the State on most soils no stock is better adapted than Citrus trifoliata. Upon this stock it thrives and bears profusely, in four or five years forming a head as many feet in height. Regarding the stock used for the kumquat in China, Mr. Fortune, from whose remarks quotations have already been made, makes the following statement: The kumquat is propagated by grafting on a prickly wild species of citrus which seems of a more hardy nature than the kumquat itself. This fact should be borne in mind when the plant is introduced into this country; otherwise we shall have a comparatively hardy plant growing on a tender one." These remarks undoubtedly refer to Citrus trifoliata, the stock now so commonly used throughout Northern Florida for all varieties of citrus trees.

Sweet stock, on account of its susceptibility to the attacks of mal-di-goma should not be used. On some soils and in some localities the trees might continue to live and thrive for many years but there is no knowing at what time they may become diseased. The pomelo stock appears to be entirely free from mal-di-goma and it is well adapted to the kumquat.

BORDEAUX MIXTURE.

Fill the spray tank two-thirds full of water, then add the lime either properly slaked and strained or hydrated lime. After the lime has been placed in the tank start the agitator and add the required amount of bluestone which has been previously dissolved in water.

Continue the agitation for about a minute after the bluestone solution has been added, then place the arsenate of lead in the tank. The tank may now be filled with water.

Bluestone is more readily dissolved in hot than in cold water, but it should never be placed in and iron kettle.

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The offices and warehouses of Baker & Hamilton of San Francisco have been equipped with a system of fire protection for their own use. They have installed a rotary fire pump with a capacity of 400 gallons per minute against 280 pounds head-pressure. This pump is driven with their improved 25-horse-power Peerless Gasoline engine. It has been inspected and installed with the permission of the Board of Fire Underwriters of the Pacific. At a recent test it showed efficiency, and places them in a position to cope with a good sized fire. The water is pumped direct from the canal which gives them an abundant supply of salt water.

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By Mrs. Minna E. Sherman, Fresno, Cal.

THE HORSE.

THE inherited tricks of horses are often very amusing. My mare Pet, is a whimsical character. She is gentle, a good roadster, and while absolutely trustworthy, insisting on doing things her own way. Pet objects to be trotted through mud puddles. If the driver strenuously insists she goes but protests by giving vent to an impatient "unch" and a little twist of her head. I was driving her daughter, Bellwood, the other day, came to a mud puddle when she slacked up. I slapped her sharply with the rein, when out came the prostesting "unch" and the little twist of her head. She also repeats her mother's trick of holding up one hind leg threatening, and laying back her ears when anyone is a little slow in starting after getting into the buggy. The inheritance is mental, not physical, Pet is a low set black Morgan mare with high action, while Bellwood is a larger brown mare, with long swinging low action, from her Electioneer sire. The two have never been driven together, as Pet does not make one of a pair kindly. She will not allow the other horse to work up with her. The daughter, Bellwood, does not show this amount of ginger, but is an even-dispositioned all-around animal. Bellwood's filly, two and half years old, is being broken. I saw her standing with the same right hind leg up and ears laid back threatening to kick when kept waiting. I could fill a book with the stories of inherited mental tricks of the horses and cows on the ranch.

A Horse Hospital.

A well built room with a couple of box stalls, where a fire can be kept at night, is needed on every horse ranch. At present, we have two patients in the hospital; neither are seriously ill and both are glad when ever anyone drops in to see them. Dandy, one of the carriage span, has strangles. This is sore throat and produces choking in a horse. The first thing noticed is that the horse takes to slobbering. When driven it shakes the head and groans. When it becomes more severe, will plunge in harness. If the choking is bad enough it may throw itself in an effort to catch a breath.

The shaking of the head often deceives people into thinking that there is something in the ear. The danger lies in the secondary stage of the disease. If the horse is driven and becomes heated he will stiffen all over, and have to be turned out for six months or more to recover. There often seems to be so little the matter with them that the owner fails to realiez the horse is sick until this occurs. After the case has been treated it is rather a slow convalescence that follows, and with it heart weaknes may occur. The horse will often eat and drink well all the while he is really ailing. There is at times a slight cough that seems to be but a trifle.

Cure for Strangles.

When you hear the horse cough put you hand under the neck and feel along the throat, if sore he will flinch, and you have located the trouble. The domestic remedy is cloride of potash. Take a teaspoonful for a dose, mix with molasses, and put on the back of the tongue with a wooden spatula; poultice with bran, or if acute, with mustard followed with a hot bran poultice. The poultices can be applied easily if long stockings are used to hold the heated mass. By alternating two poultices of bran, making one hot while the other is on, the trouble can be reduced quickly. This is the plain treatment. The veterinarian gives medicine to stimulate the heart as well as to help along the throat part. I like their simple way of giving the medicine in fluid form, squirt it with a syringe on to the tongue.

The secret of curing strangles is care and nursing. It is merely a severe sore throat that has a croupy choking in it, for I never heard of a horse even after throwing himself that choked to death.

A Surgical Case.

The other patient, at present, is a mare, "Midnight," that skinned to the bone both of her fore legs by trying to climb over a watering trough. I might as well say that Midnight has not a happy disposition at all, and tried to drive away Sweetheart, a little trotting mare. What Sweetheart lacked in size she made up in activity, and the result was Midnight got the worst of the fight. This is a case to be treated with moist surgical dressing. After three weeks all is healed except a tiny spot. The wounds were thoroughly irrigated with warm water with carbolic acid in it. Each day it is washed with warm water and creolin is rubbed on it with a little bit of cotton, then bound up with cotton and creolin.

Three years ago when we had the screw flies here, this mare could hardly have been saved. This pest was brought from Texas, and the slightest abrasion on a horse or cow was quickly filled with maggots, resulting in terrible swellings and sores, from a very slight wound. Fortunately, after three years of these torments to the poor animals, the hot weather of three years ago, with the intense dryness, proved too much for them, and they passed out of the valley. The need of quarantine is certainly great on all pests; these are as undersiable tourists as many of the Orientals now pouring into California.

Introduced Pests.

When I look back, (it is not a good thing to do I admit on the past twenty-one years, for I have ranched here that long, I see the long string of things that the East has sent us to the detriment of our fruit industry. The codlin moth, the pear and peach blights are all from the East. Still the nurserymen are bringing in peach trees fromt he East, and we will have the yellows and rosette both before long. Think of the days only a few years ago when the fruit had no worms, when there seemed to be no disease anywhere. Why! You could hardly kill a horse or cow except you struck them in the head with an axe.

The pastures long used on a ranch should be turned over and sown to grain for a year or two, and then they can be pastured again with immunity. The time is coming fast now when the land will need this changing off as the orchards and vineyards are hard on the land. It will pay well to plant the pasture to fruit and make pasture of the fruit land for a term of years, or plowing and cultivating crops on them. This I believe will come in to control the fruit pests. Fortunately the same ones do not attack the grass and cereals as they attack trees and animals.

COOLING WITHOUT ICE.

"For two years," says a practical dairyman in an exchange, "I have kept the cream from ten cows in first class condition without ice. In the corner of my house cellar, near the drain outlet, I built a platform 3 feet high and 3 feet square. I nailed to the sides burlap sacks so as to hang to the ground. On the platform I placed a half barrel with a hole to take in a hose pipe, which I ran to a pail in the sink where we pump water from the well, and fill the half barrel with water. I place the cream cans under the platform, and by several small gimlet holes let the water onto the top of the cans. This forms a cold storage chamber, and I think it is equal to the tank of water with ice in it to keep the cream. The cream gatherers say my cream has been in as good order as the best."

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FEEDING FOR MARKET.

With a spring farrowed pig to be converted into money before Christmas a day without gain in weight is a loss to the owner. The means of securing maximum gain at minimum cost will vary greatly. With hogs to be satisfactorily marketed at the above mentioned age, the best of pastures are not of themselves sufficient. To have the grain appetite well formed before weaning, the use of soaked shell corn in a pen from which the larger animals debated. Such mill feeds as rice polish wheat and oat shorts fed in a not too thin slop are excellent for young pigs, whether fed direct or through the suckling dam. Given a good alfalfa pasture and cheap corn a young pig will go on well. The cool green feed is too bulky to render an additional thin slop advisable, but puts the system in such a condition that the entire nutriment of the corn is returned as gain. It is at about this stage that the troubles from worms are likely to manifest themselves. To any one familiar with the indications of worms it is a good investment to sacrifice one of the runty, dry-haired, pitiful looking ones that gets thinner each day, no matter how much they eat. The examination of the stomach of such a pig will impress the possibility of its being possible for a young pig to have within him worms of sufficient size and number to actually utilize the total digested substances, leaving the animal to literally starve. There are many good worm remedies on the markte. The calomel and santonine mixture is affective though somewhat troublesome to administer. Than worms there is no other trouble that does more to hinder growth and favor disease. In a large bunch of young hogs there are always a few that need to be put by themselves until they are able to hold their own in the herd.

HOG ANCESTRY.

The best possible start a young pig can have is the heritage of good ancestry, says Prof. Marshall. Judicious management may, in part atone for its lack; injudicious management may in part nullify its influence, but good birth and good care make a combination which alone is safe to tie to in these days that bring hogs raised from all parts of our country to common buyers through different points, making it possible for the more favorable climatic and seasonable conditions of the southwest to aid in settling the price of the corn belt hog.

In many parts of the west it is still profitable to handle hogs somewhat the same as steers; that is, they are turned out and allowed to roam until they have attained sufficient size to be put up for fattening. This system gives a cheaply made animal but does not argue that by use of forage crops and exercise of more care, a greater number of hogs could not be so handled so as to produce many times more profit from a fraction of the land.

The following list shows the purchasers of Registered Holstein-Friesian bulls from the last report:

California Boy of Riverside, Cone Ranch Company, Red Bluff. Hengerveld Lass Paul of Riverside, C. E. Miles, Newman. Jetze Boy of Riverside, Dixon & Chase, San Jose. King Jetze of Riverside, Oliver Orr, Gilroy. Fedora of Sleepy Hollow, Feibia Paul, Ficedes, Fiction, Fidessa Majoram, Fidorence. Folleen, Johanna Witsend, Julia Hengerveld, Beauty, Legendary Tirza, Legend Suzanna, Mapessa, Mojeska Crane, Nadgy Korndyke, Salambo Korndyke, Selma, Witessa, Yonda Fidessa, Zampa Korndyke, registered Holstein-Friesian cows, have been sold by R. M. Hotaling to J. H. Harlan Company, Woodland.

Cantate Korndyke, Erka Korndyke, Fidessa Nudine, French Rolls, Helta Fidessa, Jessocrane, Pekora, Holstein cows, were sold by H. A. Hotaling to W. O. Russell, Davisville, and Kate Crane, Lady Dora Crane, Ora Colantha, to F. Vile, Gelroy.

Eighteen hundred English walnut trees are to be set on the Auburndale tract, northwest of Corona. This is the first acreage to be set to walnuts in this vicinity nearer than Temescal.

MARKETING PIGS.

If pigs are to be marketed at eight months they may be allowed an acre of alfalfa to 15 or 20 head since the feed requisite for early maturity will preclude their grazing as extensively as they would if no grain were fed. For feeding on alfalfa pasture corn at a reasonable price is an excellent food. There is no time to first grow and then fatten a hog of spring farrow that is to make payments on the first of January; growth and fattening must go on simultaneously and these feeds combine well to supply the needs. On oats or sorghum pasture a larger allowance of grain is necessary and one that contains more elements of growth. Three four-acre pastures would be preferable to one 12-acre pasture for raising a carload of hogs, since they can be changed from one lot to another so as to always have clear, fresh ground to run over, which is very important in any season and especially when disease exists in the vicinity. Just what effect the feeding of salt mixed through charred corn cobs has upon the system we do not know, but the growing pig likes it and if he can depend upon always finding a supply near the feeding ground will appreciate it though not consuming large amounts. Soft coal allowed to soak in water a few days is also relished and probably answers the same purpose as the charcoal.

The amount of grain to be fed will be regulated by time at which it is desired to market. North Texas farmers who run fall farrowed pigs on winter wheat give from one to three ears of corn night and morning until the hogs weigh 150 pounds, at which time they are yarded for finishing. Others who finish on alfalfa in spring and early summer increase the grain and allow the hogs to pasture at will to within three or four days of shipping.

Sorghum, oats and wheat pasture are good and keep the system in fine condition, but do not produce the real gains that alfalfa and rape do. Rape, however, in the southwest can not be relied upon for warm weather, but is an excellent winter pasture and will stand considerable frost if allowed to get a good start before cold weather comes.

The peanut crop is coming to be a very important one on light soils but should be regarded more as a finishing than as a forage crop. It is possible to have peanuts for the hogs to harvest from August to February and March. One acre of peanuts, the Alabama station says, will furnish food for 25 half-grown hogs one month.

In using this crop on a farm of diversified operations young hogs may be kept on alfalfa and very light grain unless very early maturity is desired, until time to turn on peanuts. Then allowing them the run of the peanuts in small lots, preferably divided off by movable fences, the alfalfa may be cured and harvested for feeding to horses or cattle.

With the possible utilization of green crops and cheaply grown finishing crops, all produced on low-priced land, there is no section that can compete with the southwest for lowness of cost and safety of pork production.

The demand for high class coach and draft horses far exceeds the supply, and these conditions will exist for a long time to come. Horses of this type are bringing top notch prices and those breeding such stock are sure of a good market for years.

The breeders of horses on the Pacific Coast will be interested and pleased to know that California has been fortunate in securing a branch stable of one of J. Crouch & Son of La Fayette Ind., who are now recognized as the largest importers of German Coach, Percheron and Belgian Stallions in America. They have located their California Branch at the State Fair grounds, Sacramento, and have on exhibition some of their finest importations, and will take pleasure in showing their stock through their manager Mr. J. F. Campbell, who will explain the terms and guarantee on which these magnificent horses are sold.

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Farmer:—"Keep chickens."

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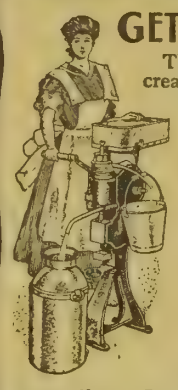

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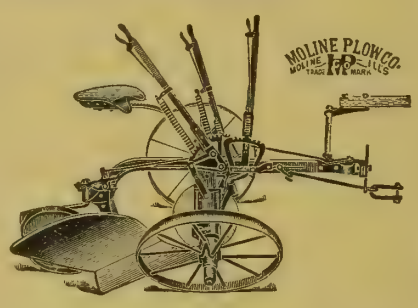

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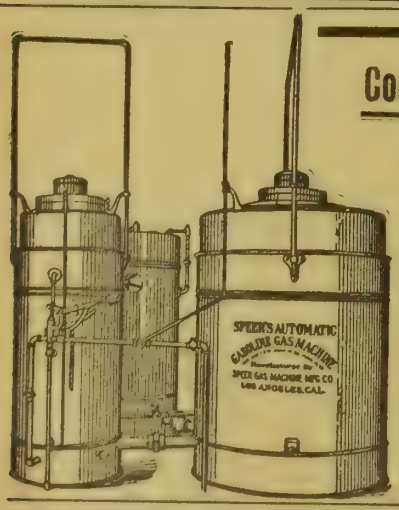

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THE GOOD SHEPHERD.

Providing a person about to embark in sheep keeping were to inquire what would be his first essential in making a start in that industry, I should answer, "Develop a kind and patient disposition." In reality, it is practically useless for a man possessed of a hard heart and cruel temper to pay long prices for blooded stock or short prices for culls. He will succeed with neither, in case he gives the flock his personal care. The sheep, being a nervous, timid creature, cannot thrive under abuse. From the earliest history of man the word "shepherd" has stood for the meaning of gentleness and tenderness. You will note many places in the Bible where this world is used in reference to this very meaning. Shepherds, taken as a class of men, from the time of Abraham to the present day, average as great-hearted, whole-souled, trustworthy individuals, men you may rely upon and safely appeal to when in case of need or trouble. Why is this? It is this: The sheep is the most helpless of all our domestic animals, being the prey of many diseases, countless parasites and are ravaged by wild geasts. It is the watchful care, nursing the sick sheep or starting the new-born lamb upon life's journey that softens the heart of the good shepherd, "for he loves his sheep." This rule does not only apply to sheep, but to all dumb animals trusted to our care. The man who wins the purple and blue in the show ring, you will find, is the man who treats his stock as they should be treated, with kindness. Stock will ever respond to kind treatment; it is the best "feed" you can give them. The nervous strain of fear is a serious obstacle to their well being. The person whom nature has blessed with a kind heart, or he who has developed this disposition by his own strong will power, such a man will succeed in the sheep fold of this world and succeed to the "sheep fold" of the one beyond.—H. H. W.

WHAT IS A COW WORTH?

What are the cows worth that produce 400 pounds of butter per annum? Here I am going to make a statement and undertake to prove it correct, says H. B. Gurler, De Kalb county Illinois, as quoted by Hoard's Dairyman. When a cow that produces 200 pounds of butter per annum at a food cost of $39 and a labor cost of $12.50 is worth $35, the cow that produces 400 pounds of butter annually is worth $400, and the owner can make net $16 more from her after paying interest on the $400 than he can from the cows that produce 200 pounds of butter.

There is no more labor connected with the 400-pound cows than there is with the 200-pounds cows. The price at which butter has been credited, i. e., 20 cents per pound, is the net price from the creamery after the making has been paid for. In this herd the increased cost of feed for the 400-pound cows was more than offset by the increased amount of skim milk, so we have the 200 pounds increase of butter as net profit over the 200-pound cow. Two hundred pounds of butter at 20 cents is $40. We have $400 invested in these cows which at 6 per cent. interest is $24, which we will deduct from the $40 and we have left $16 to the credit of the 400-pound cow.

A Rare Opportunity.

A little over a year ago, the writer had the pleasure of sitting beside Gen. W. R. Shafter in his buggy, and driving over his ranch, while the General enthusiastically pointed out the good qualities and beautiful lines of his fine herd of Jersey cows. As we drove through the fields he incidentally pointed out the old war horse which carried him through the Cuban campaign. But his real pleasure was in referring to his fine cows. As will be noted in another column, this fine herd is to be sold, and it offers an opportunity which will compel Jersey breeders to sit up and take notice.

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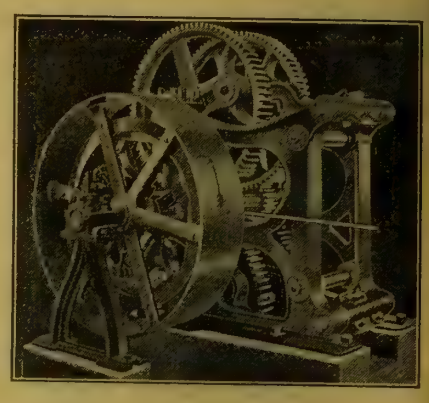

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A real beauty and the earliest and most vigorous of all strawberries. A good table berry and will ship further than any other berry. $3.00 per thousand.
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$2.00 per hundred, $15.00 per thousand. Crandall's Early Blackberry, Cuthbert Raspberry, Lucretia Dewberry, $1.50 per hundred $10.00 per thousand. All plants carefully packed.
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Strong Roots $1.00 per 100
$6.00 per 1000
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The Vegetable Garden

By ERNEST BRAUNTON

SAVE THE RAINFALL.

STIR THE soil in the garden as deeply as you can, and do it at once, so that you may have a deep reservoir to hold the rainfall. By catching it in a deep basin it will be prevented from running off and consequently will soak down to a considerable depth.

Such a supply of soil moisture will last a long time if proper means are taken to prevent evaporation and if a comparison is made with a plot of unprepared land it will be seen that the latter will need about two good irrigations before the prepared land needs any and yet will never, throughout the whole season, prove as resourceful or drought-resistent as the more deeply plowed soil.

Land that has a hard surface, is sloping, and has no winter crop of weeds or other vegetation, will prove a poor place for any crop.

Not only should the land be deeply plowed, but toward the end of the rainy season, which is now, the surface should be kept stirred to prevent evaporation of soil moisture for the bright, sunny days which we are having at the present writing, will soon rob the soil of its water content unless evaporation is checked by a soil mulch to break up capillary connection between the soil bed and the surface air.

What has been said above regarding the garden is equally true of the largest field, no matter what the contemplated crop. In our semi-arid clime, this evaporation is much greater than occurs in any section east of the Rockies, except possibly portions of what is known as the "Great American Desert."

CARE OF GARDEN SOILS.

There is no one point upon which our people more commonly err than is supposing that any piece of mellow land, suited to trucking, but not rich, can be made at once to produce a paying crop of vegetables of all kinds by the excessive use of fertilizers upon it. While such crops as the English peas may be produced on such land, the man who would undertake to grow a crop of early cabbage on it would be pretty certain to fail to get a paying crop.

No matter how good the soil is for the ordinary farm crops, it will not be in condition to give the best results in garden vegetables until after good culture and heavy fertilization. And while the commercial fertilizers contain all the elements of plant food that stable manure has, and in better proportion, the vegetable matter in the manure not only has a good mechanical effect on the land, but it keeps up The commercial fertilizers lack this, the formation of nitrates in the soil. and the lack must be supplied if we keep up the productiveness of the land. Decomposed vegetable matter, especially leaf mold will do this, but this is an expensive thing to collect and haul.

The most rapid and economical way in which the vegetable matter can be gotten into the land is by the growth of some leguminous crop on the land. For this purpose there is no crops better than vetch by reason of its rapid decay. This plant, in common with all the pea family, has the power of capturing the nitrogen from the air and fixing it into the soil for the succeeding crop. Its heavy growth above ground, the greater part of which, too, comes from the air, furnishes a larger amount of vegetable matter than would be gotten in the heaviest dressing of manure.

The plant gives the California gardener a great advantage over those in a colder climate, because it can be grown after his early crops are shipped, as a preparation for his winter ones, and he can thus do as much in the way of supplying his soil with organic matter and nitrogen in one season as the other man can do in two, and can at the same time raise a valuable forage crop, for as the soil becomes well stored with vegetable matter we do not think that it is advisable or economical to bury the whole growth.

The growth of tops will be of more value for feeding stock, and by careful saving of the manure he can return to the soil nearly as much of manurial value in a much more available condition. The keeping of dairy cattle in connection with market gardening is thus practicable and profitable. The manure thus made is also a great help in the saving of commercial fertilizers. Whenever there is a ready sale for dairy products it will always pay to keep cows for the consumption of the forage that can be grown so heavily on these lands, and to use the utmost care in the saving of all the manure.

POTATO SCAB.

"J. A. S.," Lompoc, sends in a potato affected with scab and several enquiries reach us this week regarding this trouble also asking what it is and how affected by the prescribed treatments.

The effect of corrosive sublimate n preventing scab will be made plain when we understand the cause of scale to be a minute microscopic plant which penetrates the skin of the potato, lives on the substance of the tuber and matures its seed there. When scabby potatoes are planted without treatment, the seed of the fungus is also planted, and with the new crop of potatoes an increased crop of the fungus is produced, until the market value of the potatoes is almost destroyed.

It has been found that a bath of the seed potatoes in a solution of corrosive sublimate kills the scab fungus, and if the soil has not had potatoes grown upon it recently, the new crop will be quite free from the disease.

Take three ounces of corrosive sublimate and dissolve in ten gallons of water, using a barrel that you do not use for any other purpose for the solution. Put what seed potatoes this water will cover in a thin bag, and let them remain in the bath two hours. Some have treated seed sufficient for two acres with renewing the strength, and it was entirely effective. Some planters cut the potatoes before the bath, sometimes after, without any difference in results. Do not forget that corrosive sublimate is a poison. Keep the treated potatoes and the barrel containing the solution out of the reach of animals.

POTATOES IN AUSTRALIA.

Potato land is usually ploughed twice, and the early seed planted to a depth of 4½ inches. The crops are generally dug before the stalks have withered, or any hot weather experienced to injure the tubers. With the later crop, however, an extra inch in depth, or 5½ inches, is made for the seed in order that a good covering against the hot February sun may be secured. Rows are sown 28 inches wide, and sets planted from 18 to 20 inches apart.

The crop is usually drill-harrowed three times; on each occasion the implement is fitted with different tines. When the plants appear above the ground a drill-harrow is used, then hand-hoed between. The second drill-harrowing, as well as repeating the former operation, puts a little earth up to the stalks, and the last harrowing is done as the rows are about to close. With hoeing, weeding, and hilling-up, cultivation operations are completed, and a clean, healthy and attractive-looking crop is the result.

PREVENTION OF ONION SMUT.

The remedies are dilute solutions of formaldehyde, commercially known in 40 per cent. strength as formalin, sprinkled upon or sown with the seed, and applications of ground quicklime, applied to the soil just previous to planting. The results appear to be entirely satisfactory.

A bachelor maid in Cologne
Grew tired of living alogne.
"If a man 'neath the bed
Should hide," she once said,
"I'd steal him and call him my ogne."

Hives of bee men oft remind us.
To disturb then is a crime.
We depart, and leave behind us
Footprints that beat double time.

Signal Hill Advance Dewberry Plants

Strong tip rooted plants
$1.50 per doz.
10.00 per 100
50.00 per 1000

Strong plants from this seasons cutting
.60 per doz.
$3.00 per 100
25.00 per 1000

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Electric Frost Alarm Thermometer

Automatically rings a bell to announce the approach of frost. Frost Prevention Co., Fresno, Cal.

Crimson Winter Rhubarb
Original Burbank Strain
$1.50 per Doz., $6.00 per 100, $40 per 1000
Now is good time to plant. We are the only Rhubarb Specialists on the Coast. We devote most of our time to its cultivation and improvement. We have the Best pedigreed plants ever offered of this wonderful money maker. Write or call on
J. B. WAGNER, the Rhubarb Specialist, Pasadena, Cal.

A Fine Stock of Superlative Raspberry, also Fruit Trees and Vines of All Sorts. Both Phones.
P. S.—See Article in Cultivator on Page 550, issue of December 6th.

New Muskmelon
The new muskmelon pictured and described on the Cultivator cover of Jan. 10th is handled exclusively by
JOHNSON & MUSSER SEED CO.
113 N. Main St., Los Angeles, Cal.
50c per packet, $2 per ounce

Strawberry Plants
TROPICO BEAUTY
BRANDYWINE
$2.00 per 1,000, f. o. b.
Lots of 20,000 or more, $1.75 per 1000, f. o. b.
Lots of 100,000 or more, $1.50 per 1,000, f. o. b.
For Sale by the Grower,
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CHILEAN WATRMELON SEED
This seed was taken from melons perfect in shape, large size and thoroughly ripe, a perfect type of the Chilean melon. No seed taken from culls. I will sell this seed while it lasts at 75c per pound in lots of less than 4 lbs., by mail. Five pounds or over, 60c by express. S. FAIRBURN BURBANK, CAL.

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With the Citrus Growers

By J. W. MILLS

ORANGE SEED BED.

JUDGING from the number of queries that come in regarding the propagation of oranges stock from seed, there will no doubt be a surplus of seed bed stock in another season. This subject was treated in these columns a short time ago.

Seed is best taken from the fruit by first allowing the orange to rot. Place the pulp in a sieve which will not allow the seeds to pass through and wash the pulp through with the garden hose.

Prepare a seed bed by sifting the soil to remove stones. Make this seed bed at least a foot deep; 18 inches is better Fill in the bottom six or eight inches with soil mixed with equal amount of well-rotted manure. Cover this with good sifted soil to the surface of the ground and settle well by flooding; when dry enough to work well, hoe it about one inch deep, level up with a rake and firm it well with a board. Make trenches half an inch deep and six inches apart. In these, place the orange seeds so they will nearly touch and cover half an inch deep with sand. Stretch burlap or cheese cloth over the seed bed and sprinkle every day just enough to keep the surface damp. When the seedlings have about four leaves on them, uncover at night, before sundown, so that they will receive a little sunshine. Cover them again soon after sunrise so that the hot sun will not scald them. During cloudy weather it may be left off all the time. Gradually extend the time of leaving the cover off till the young plants become accustomed to the sunshine.

During extremely hot days during the summer, the covering should be left on. Late in April is the proper time to start the seed bed.

The plank should not be removed from the seed bed till the following spring and they will need protection during cold nights. Nearly all orange seed beds are made under lath houses, but even with the best of care the loss from damping off is heavy sometimes and when this condition becomes apparent, the damage is done and there is no help for the young plants. We have never seen damping off in the seed bed when the plants were grown in the open and the sun allowed to strike them early and late in the day at the beginning, with a gradual increase of the full sunshine.

The young trees should be transplanted with the nursery when they are a year old and after the soil warms up in the spring. The trees should be planted about one foot apart, in rows four feet apart.

TANGERINES AND MANDARINS.

We were asked the other day to explain the difference between a Tangerine and a Mandarin orange. We couldn't do it. We never heard but one man attempt to explain the difference and he got so badly mixed up that we never had the courage to try it. The names Mandarin and Tangerine seem to be given to varieties with slightly differing qualities, but these qualities may be found in either of the supposed types.

This type of orange is the Kidglove, so called because the rind is so loose that it may be removed without soiling the gloves. It is quite a favorite for the home orchard in its season, the flavor being distinct from the Washington navel or the ordinary sweet orange.

It is not grown on a large commercial scale, though small plantations of them have given good returns.

It is not an easy orange to handle as the rind is very thin and easily broken. For this reason it is shipped in half-boxes. While the demand in the market for this orange is limited, it is very desirable to have in the collection of home fruits.

Said a man in a spirit of pique
To his wife, "in that hat you're a frique!"
"Sir, you'll see how it feels
To get your own meals,"
Cried his mate. "Ta-ta for a wique!"

Gas from cocoanut oil is being used in the Philippines.

ARTIFICIAL HARDPAN.

If the surface layer of six or eight inches which is supposed to be kept mellow by cultivation, should remain unmoved at all after irrigation, we would expect it to become hard as it dried out and this drying hardening process would go on to increased depth till water was again applied, and then the water would penetrate the hard surface but slowly.

If this application of water should be repeated at intervals without stirring the surface earth in the meantime we would have hardpan surface and the water would finally flood off from instead of being taken into the ground.

Now, if the upper few inches should be stirred but imperfectly or not to a sufficient depth, the drying hardening process would yet go on in the stratum immediately below, in a lesser degree than it did at the surface, but as certainly, till water was again applied.

You readily see that if this sub-stratum is allowed to become dried and hard, it wil not only take more water to saturate it at the next irrigation, but since water percolates faster in moist soil, it will take it less readily than if it had remained in a fairly moist condition from the former irrigation, and more water remains in the surface stratum, where it is not wanted. And because of this substratum being less well saturated, unless better protected, it dries out and hardens the more before the next irrigation, and this process continued results in the more or less well established, troublesome layer which we call hardpan.

FLORIDA FROSTS.

The late cold wave was peculiar in many respects. It inflicted more or less injury in apparently the most capricious manner. Adjoining citrus groves show a wide difference of results, one not shedding a leaf, while the other is nearly bare. Even some trees are stripped on one side and untouched on the other. The same grove will show trees seriously affected, while many standing side by side with them do not exhibit a sign of damage. Localities in the same latitude, lying east and west from each other, show the widest variation. It is the general opinion that the cold came in streaks, however, such a thing may be posible. A line drawn from north to south through eastern Hillsborough, Polk, Manatee and DeSoto counties would center the worst hit neighborhoods.—Tampa Times.

ORCHARD IRRIGATION.

To those who have practiced it, it seems amazingly strange that the methods of placing the water as near as possible to the root bed by deep furrows should be of slow growth in general practice. The amount of expensive water evaporated from wide shallow furrows, added to what they needlessly deposit in the surface stratum, to go into the air later on makes up an enormous wastage that may be largely prevented. Yet every day during the long summer you see this wastage going on over thousand of acres. But this direct money loss in water is a minor part of the real damage. A good irrigation is pronounced, because a wet surface is produced; but really the root bed has been robbed of the moisture absolutely required to keep trees vigorous and develop good fruit.

IT'S PENNY WISE.

Policy to set out a good tree, costing good money and then let the sun burn the bark or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Manufacturing Company, 2124 Willow St., Los Angeles.

At eve it rains a lusty dew,
And in the morning it isn't through;
At noon it rains a regular pour,
And then at night it rains some more.

The bituminous coal fields of Alabama cover an area of 8600 square miles.

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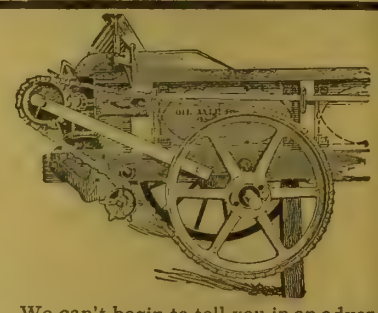

and this is where some spreaders give you trouble. It's easy enough to build the front end of a spreader—the front end is a *wagon*; the back end is a *machine*.

In SUCCESS Manure Spreaders

28 years' experience insures no trouble at the business end. Twenty-eight years has eliminated the trouble-making things.

We tried gear drives—they won't do. We saved you the trouble of trying them.

We tried smaller axles—they won't stand the strain.

We tried all woods for the frame and have settled on second-growth white ash.

Look at that cut again—See the heavy iron brace from the beater end to the driving axle. It removes all strain from the end of the body and makes the cylinder run freely without binding.

See the big driving wheel and the chain—that's a steel-pin chain—the only kind that will work satisfactorily.

We can't begin to tell you in an advertisement all the good points in SUCCESS Spreaders, but when you get ready to buy a spreader do three things.

First—Write for our spreader book. It tells plainly and truthfully about SUCCESS Spreaders. It will start you right in the selection of a spreader It will be a standard to guide you in examining others.

Second—When we send the catalog we tell you who sells SUCCESS Spreaders in your locality. Go to that dealer and see one. Examine it thoroughly Compare it with others.

Third—And most important of all—Go to some man who has used a SUCCESS for a few years and ask him what he thinks of it.

Do this and you will have Success with your manure spreading

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DEERE IMPLEMENT CO., San Francisco, Cal., Pacific Coast Agents.

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a hot water machine, constructed along lines that are a working demonstration of the true way to apply the fundamental theory of artificial hatching.

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Five, Ten and One Hundred Acre Tracts Improved and Unimproved Land with lots of Water. ***Price $100 per Acre and Up.*** Terms, One-Fifth Cash, balance in one, two, three and four years.

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BENEFITS OF CULTIVATION.

Cultivation is beneficial in the following ways: It increases the water-holding capacity of the soil and conserves moisture, both by allowing rain to sink more freely into it and by checking evaporation. It pulverizes the soil and allows the air to penetrate, thus supplying oxygen to the root.

In cultivated soils, decomposition and nitrification go on more readily and if the materials are present from which nitrogen can be formed, its formation takes place more rapidly than if the soil be left uncultivated.

Most of the moisture in tillable soil is held as a minute film surrounding the soil particles. It necessarily follows that the more numerous the soil particles in a given space, i. e., the smaller they are, the greater will be the water-holding capacity of the soil, because the total surface area of all the particles increases as they are reduced in size.

And it is true, within certain limits, that the water-holding capacity of a soil increases as the size of the particles diminishes. If, however, the particles become too small, they may become too closely packed, and thus this object of cultivation will be defeated.

The size of the particles can be reduced by cultivation by breaking up masses which may have become more or less cemented together, and the water-holding capacity thereby increased.

The opening and loosening of the soil permits the rain to penetrate. If the surface of the ground becomes hard and compact, the water will run over the surface or collect in puddles and disappear by evaporation. In either case the loss will be great. But if the soil is well stirred and loose, the water will enter.

Once it is safely beneath the surface, it is necessary to keep it there; it has gained entrance by a passage through which it should not be allowed to escape. The water will again make its way to the surface by capillary attraction, passing upward through the minute spaces between the particles of soil. If these minute tubes or passages extend right to the surface the water rises to the top, comes out, and is carried away by evaporation.

Frequent, shallow cultivation will prevent this escape of water, by breaking the capilary tubes. The top earth is stirred, it parts with its moisture and becomes quite dry. Then it acts as a dust blanket and the great amount of moisture below is not allowed to reach the surface to be carried away by the moving air above.

REDUCING HARDPAN.

Deep, thorough, persistent irrigation and cultivation will subdue the most obstinate cases, except when formed by the cementing process. Modern medical science has found means of saving life and limb in many cases by less harsh means than the cruel knife. So with modern irrigation and cultivation. I am firmly in the belief that the deep cutting subsoiler should be abandoned. But there is another way and a better, because it saves this serious sacrifice.

In preparing for planting, see that the entire surface is thoroughly plowed fifteen inches deep—twenty would be better. After that the orange tree root-bed need not be disturbed by the plow, and by proper care nine-tenths of the hardpan layer, so damaging to the feeding roots, need not occur. Of this root-bed the location and character of which I have tried to keep before you, I heartily command a more careful study than has yet been given by most orchardists.

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Wears away the hardest stone,
The constant gnaw of towser
Masticates the toughest bone.

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Chausen—"And lays carpets.?"—

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And embracing all the standard sorts, are to be had of our establishment. Bear in mind that we are the largest growers of Citrus Trees in the world, and that our stock has been awarded the gold medal at every world's fair in the world where we have shown. Our fine booklet, containing 50,000 words and over 100 illustrations, gives you all the points on Citrus Culture. Price 25 cents. Can we send you a copy?

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California Cultivator

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HILL'S FARMS.

Of particular interest is the article from J. J. Hill, the great railroad president in the Current Century, on the establishment of model farms, conducted by the National Department of Agriculture. Mr. Hill, as every one knows, is a practical farmer and his education has been gained from the soil, as well as from the lore of agriculture writers.

Mr. Hill's idea is to have a model farm in every county in every state in the Union. He would limit its size to thirty or forty acres, as affording one of the most valuable demonstrations of all in the simple showing that a small, well-tilled farm is better than a large one to which equal care cannot be given. He would place each farm under the care of "an intelligent farm-hand, hired at the current rate of wages;" five or more farms to be under the supervision of "a superintendent skilled in both the theory and practice of modern farming." He shows that only about 100,000 acres of land in all would be required, and that the experiment, as national appropriations go, would not be costly.: Its beneficial influence on the agriculture of the country would be easily demonstrable. The model farm would be to the farmer what the technical school is to the mechanic, the engineer and the manufacturer. The farmer will learn better methods by observation, when he will learn them in no other way. "I can do that!" will be his exclamation when he sees superior results gained by a new as compared with an old process; whereas, what his eyes have not seen he is inclined to doubt, think-up with" and found at least safe.

PROCESS FOR SURFACING ROADS.

Not long since there appeared in the Los Angeles Times, an article on oiled roads: A new process of surfacing, which is said by experts, to be almost equal to asphalt.

The method appears on its face to be practical. It has been tested, it is averred, and stands the test of time admirably. It is here given in the hope that it may be studied with care by trustees of municipalities, boards of supervisors and associations having in view the making of roads and boulevards. The method differs from ordinary street or road oiling in that it is a veritable construction of a street out of natural soil with the use of oil. The resultant product is in fact very like an asphalt—lies as smooth and will last nearly as long. While more expensive than careless "oil sprinkling"—which experience has determined is practically useless—it is nevertheless so inexpensive as to be practical for use in cities and upon the main country thoroughfares.

The system used is about as follows: The street, which is a sandy loam, with some admixture of blue and red clay and slate and gravel, is graded and plowed six inches deep and pulverized with harrows. It it is very dry, a small amount of water is sprinkled on and mixed in so as to make it workable. Oil is then applied at the rate of one gallon to the square yard, and the cultivators mix it in to the depth of four inches. A second gallon of oil to the square yard is then applied and cultivated down to five inches. The oil is then turned under with a turning plow, four inches deep.

The process next succeeding this in the common forms of road oiling is the rolling of the road, which crushes down a thin scum on the surface that later scales off and leaves the road full of chuck-holes. But with the new system the next process is one of tamping. A huge cylinder about eight feet long and five feet in diameter, weighing some 5000 pounds and furnished with rows of flat-headed teeth, is hauled back and forth over the street, slowly tamping the oiled earth up from the bottom to within two inches of the top. When the tamper first goes over the street, it sinks the teeth, which are about six inches long, clear to the end in the soft, oily earth, but each time a new layer of solid asphalt is plastered on the bottom, and the cylinder rises a little out of the mass until, when the tamping is finally completed, the mixture is so solid that the teeth no longer sink in .

There is a vast difference between merely crushing the surface of an oiled road with a roller and tamping five or six inches of oil and soil from the bottom up. That difference means years of wear.

At this stage of the proceedings the tamping is brought to within two inches of the top.. The street is then regraded, and the two inches of loose soil is cultivated and given one gallon more of oil to the square yard. That is altogether three gallons to the square yard, all applied warm, so as to sprinkle freely. Again the cultivator, and then the tamper, this time worked until it reaches the surface. When the tamper is done, the surface is a little uneven from the marks of the teeth, and this is taken out by a roller weighing two tons to twelve inches of tire. A more perfect surface can be obtained by a slight sprinkling of gravel before the roller comes on.

The cost of this work is about 16 cents a square yard, or $1 a running foot, to a 56-foot street (between curbs.) The cost on the ordinary city street where no grading was needed, would amount to from 30 to 40 cents a running foot of frontage. In other words, if done under the Vrooman act, a street could be practically paved for about $15 to $20 to the lot—provided that curb, sidewalk and gutter were already in place

The oil used is of 12.5 gravity, Baume, containing 69 per cent. of soft D-grade asphaltum, free from sediment and of gravel. The time required for the work is about twenty days to the mile.

"Help one another," the snowflakes said,
As they cuddled down in their fleecy bed;
"One of us here would not be felt,
One of us here would quickly melt;
But I'll help you and you'll help me,
And then what a big, white drift we'll see."

FREE SEED DISTRIBUTION.

The farmers are "getting on" to the fact that the free seed business of the congressman is a graft They the letting this thought be known too. By resolutions, in organizations, they are stating the fact before the country.

The fact has been long demonstrated that the distribution of seeds such as are sent out by congressmen accomplish no good in the world. The seeds are usually worthless, seldom of varieties wanted or needed by the farmer, and, beyond being appreciated as a remembrance, thought very little of by the farmers themselves. If the congressmen could only realize that the farmers of this country are not children, nor cranks, nor fools, they would wake up and cut out this unmitigated nuisance. It is very pleasant to contemplate the action of all the influential farmers' organizations condemning this foolish waste of money.

STATE MODEL FARMS.

The Department of Agriculture is making a strenuous effort to relegate the "free-seed" graft, and establish in lieu thereof a system of experiment farms throughout the country.

The plan is to have an experiment station in every congressional district presided over by an expert agriculturist, whose duty it shall be to provide information to farmers and furnish seeds when possible suitable to the locality where the station is located.

At present the free distribution of seeds costs the Government $150,000 a year. Messrs. Galloway and Spillman of the Agricultural Department purpose that this amount be used in equipping experimental farms. If Congress can be made to see, says the Journal of Agriculture, the good that would be accomplished by such a method of educating the farmers, it is safe to say that an additional appropriation for the purpose would soon be forthcoming. With the seedmen and many farmers fighting the "free-seed graft," there is no hope for any betterment of the present service, so if the "model farm" plan can be substituted for it, it is hard to see how anyone can be opposed to it.

Government officials estimate that with the $150,000 now spent in distributing seeds two experts can be sent into every State and Territory to establish experiment stations. It is expected that the farmers would gladly furnish the land and equipment for such farms, so that the only expense to the Government would be the salaries of the experts, which would not average more that $1.500 a year. Nearly every experiment station now being operated in the United States is self-supporting, and many of them are returning a profit. In the case of the new stations such profits could be used for extending the work.

The plan has its merits which appeal to the Cultivator as worthy of consideration. The "free-seed graft" is a back number. It has been a "cinch" for Congressmen, but it has done the country little good. It will probably require some education to get the idea out of the minds of members of Congress that they are not relinquishing some precious perquisite which will tend to strengthen them with their constituents, but the end of the "free-seed" monopoly is evidently near at hand.

RECOMMENDATION OF GRANGE.

The national Grange will make as specialties before Congress this winter the National Good Roads Bill, known as the Grange Currier Road Bill which makes a national appropriation of $24,000,000 to be alloted to the different states in building a national system of good roads; also the Parcel post. The Grange has advocated the parcel post many years, and has many times shown up the fallacy that it will increase rather than diminish the deficit in the post-office appropiations. The opposition to the parcels post comes from three of four big express companies, who have had their offices and "favorable men" in Congress and in the United States Senate, and who now have a monopoly of the business, whose stock is quoted at $200 or $300 above par, who pay twelve per cent. dividends, and get forty per cent. a year on the actual investment.—Farm Journal.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

Early tomatoes are one of the best paying crops in Orange county.

Santa Ana has been favored this season with 12.58 inches of dampness.

Santa Maria has had 12.53 inches of rain to date. 18.74 inches of rain for Chino.

Redlands has received near 16 inches of rain to date, and nobody is asking for more at present.

Within a week it is expected that the first shipment of asparagus will be under way from Imperial.

One million orange and lemon trees for planting in Imperial Valley is what Dr. H. J. Fuller is planning.

In the Fullerton district the 1906 tomato crop was fully three times larger than that of the previous year.

Plans are being made for a big rabbit hunt and round-up on the 22nd of this month, on the Jurupa ranch near Corona.

Seeding of sugar beets at Chino for the coming season, is just starting and the prospects couldn't be better. There will be a large acreage and everything is favorable.

Since the duty was taken off American cattle by the Mexican Government carloads have been crossing the line to replenish the rundown ranches in various parts of Mexico.

Vegetable men are already planting the seeds of the summer varieties of tomatoes about Santa Ana with the expectation of picking the first of the crop sometime in June.

The first carload of cabbages from Southern California this season shipped from Olive by the California Vegetable Union. The first shipment will net the growers $20 a ton.

The Japanese of La Habra are making heavy shipments of peas to Los Angeles daily, hauling them to Whittier, where they are shipped over the Pacific Electric at a very low rate.

Never before was there so many cattle and hogs raised in the "desert" section, and the shipments of these is adding to the feeling of comfort and satisfaction prevailing among the farmers.

About forty acres of asparagus will be planted this spring near Imperial, by the Messrs. Stone and Pashgian. Under the warm desert sun, vegetables are usually precocious, and ripen at a time when prices are high.

A big crop of cabbage has been put in, in the vicinity of Olive this season, and a Los Angeles vegetable house is building a packing house there to handle the crop. It already has contracted for 250 acres and expects to get 200 more. Indications are for a big crop.

What the Hunington Beach cannery's output will be next season may be computed from the figures of last season. If the tomatoes handled from 50 acres, put up 200,000 cans and 2000 barrels, the yield from 500 acres will produce something like 2,000,000 cans and 20,000 barrels.

Last season the Huntington Beach Cannery, turned out 4000 cans per day during the height of the season in October and November, and altogether put up 200,000 quarts, or 8000 cases of 24 cans each, besides 2000 barrels of pulp to be used later in the various forms of catsup, pickling and sauces.

The barley crop is painting the Imperial Valley green where tens of thousands of acres have been given over to stubble for several months. Filling in the space between the alfalfa fields, the barley is making more apparent the period of prosperity which prevails generally over the country.

H. E. Hart and son of La Habra, netted over $1000 on a crop of tomatoes from eight acres. For several weeks they received as high as $70 a ton. It is reported that land in La Habra produces from eight to eleven tons of tomatoes per acre suitable for canning, and from three to four tons per acre suitable for eastern shipment.

HORTICULTURE.

Celery is fast being shipped by rail from Smeltzer and Newland stations. The shipments for the week foot up to 163 cars.

Between $22,000 and $23,000 have been distributed to the orange growers so far this season by the Santiago Orange Growers' Association.

The heavy rainfall of the past month, about four inches more than normal, has seriously retarded the work of the farmer and orchardist in Southern California.

Many orange trees are being planted in spite of the high price of $1.75 each which is demanded. Orange trees are scarce at this figure and lemon trees are not to be obtained at any price.

Payments just made by the Santiago Orange Growers' Association show a net profit of $1.32 per box on the tree for orchard runs, for the holiday shipments, with a possible 10 cents additional at the end of the season.

The increased flow of the artesian wells about San Jacinto is very noticeable. Many old wells that had not flowed for years are now delivering good streams and other wells have increased their flow two and three fold.

W. S. Corwin and son of Highland, have received the returns for a car of Lisbon seedless lemons shipped last month and sold in New York, January 30, by P. Ruhlman & Co. They received for the car $1151.35 gross, or an average of $3.21 per box.

The orange shipments from Redlands during the week just closing, amounted to seventy-eight cars. Most of these were sent out last Friday and Saturday. This brings the total to 839 cars for the season, which is over 300 cars short of last year's record to date.

The net profit on the tree per box for orchard runs for the December shipments in the Santiago Association is $1.11, also with the possible addition of 10 cents per box at the end of the season. The net profit for orchard runs for the holiday and December shipments last year were between 75 and 85 cents.

Northern California

AGRICULTURE.

Hog cholera is prevalent on some of the ranches in the vicinity of Petaluma.

Shortage of railroad cars is assigned as the cause for the shutting down of the sugar beet factory in Visalia.

The fifteenth annual citrus fair of the Cloverdale Citrus Fair Association will be open on Tuesday evening Febuaury 19.

Fire entirely destroyed the Bulter creamery at Point Reyes last Saturday causing a loss of $6,000, partially covered by insurance.

H. L. Wilson of Alpaugh, states that at the present time contracts have been signed for over 500 acres of sugar beets in his section.

It would seem that the beet industry in Tulare county was becoming the most profitable industry from the number of acres that are to be used in the culture of the sugar beet this season.

L. B. Spencer of Princeton, and several of his neighbors are going in heavily for hogs. Last season Mr. Spencer raised a large number of swine, which in exactly six months weighted an average of 160 pounds and brought over $9 a peice.

The Fresno Poultry, Pigeon and Pet Stock Association, announces their Show dates for December 11th to 14th (inclusive) 1907. This is the tenth annual exhibition given by the association, and they expect this to be their banner show. Judging will be by comparison.

The ranchers of the vicinity of Healdsburg, are taking a pronounced stand against allowing fishing, hunting or trespassing on their premises. In Alexandra Valley and other sections the farmers have united together for the enforcement of the law and propose carrying it out.

The State prison directors have fixed the price of San Quentin grain bags for the year at 7 3-4 cents, which is about 1 cent under the market for other grain bags. Those farmers who take time by the forelock and get their orders in now, will benefit thereby on the basis of current quotations.

HORTICULTURE.

Diunba has had 9.72 inches of rain at last report.

Salinas does not care for more rain at present, having had 16.41 to date.

The rainfal in Suisun Valley for the season ending January 29th, is 15.22 inches.

Yolo county expects a most unusually heavy fruit crop this coming summer.

Dixon is becoming famous on more than one thing, one of the principal things being the horses bred here.

A single individual is planning to set out 150 acres of eucalyptus trees next year on land about four miles distanct from Modesto.

As has been their custom for years the Board of Supervisors of Sonoma made an appropriation of $150 towards advertising the coming Cloverdale Citrus Fair.

California's hop and raisin crops have benn exhausted at the largest prices paid in many years, and it is estimated that the orange crop will amount to thirty thousand car loads.

The precipitation for the last storm at Sisson is 3.44 inches. The season's precipitation is 18.32, inches, against 10.94 at even date last year. It is the heaviest and most persistent rainfall on record.

During the week seven cars of citrus fruits were shipped to market from Lindsay, four by the Independent Packing Company, two by the California Citrus Union and one by John Demartini & Company.

According to the gauge .42 of an inch of rain fell in the city during the forty-eight hours ending at 7 o'clock this morning. The total rainfall for the season amounts to 26.89 inches.—Watsonville Pajaronian.

George Blackburn of Healdsburg, received a large shipment of cherry trees, to be set out on the Hopkins ranch. The trees are the Royal Ann, and nine acres will be planted just as soon as the weather permits.

A. Exstein of Stanislaus, has sold more than 75,000 eucalyptus trees to date this season. With the expection of one lot of 11,000 to J. N. Lester, of Elmwood, the trees sold have been taken by people about Modesto.

In his report to the supervisors, Horticultural Commissioner Shell of Fresno states that 68,000 deciduous trees have been inspected and sorted in the county during the month of January by the commissioners.

P. B. Norton, traveling passenger agent for the Union Pacific railroad, was in town Tuesday and states that he has purchased a tract of 160 acres of land near Remnoy, Tulare county, and will plant it to eucalyptus trees.

The rainfall since our last report has been 1.13 inches, making for the season 17.92 inches against 8.28 to a corresponding date last year. In February of last year the precipitation was 4.54 inches.—Sutter County Farmer.

We understand that the Burr Brothers still have several cars of Washington navel oranges on the trees in their Sunny Slope grove, near Lindsay, which are now in excellent condition and will be shipped to market at once.

Another vineyard association was formed this week at Williams, Colusa county, and 80 acres of fine land were bought by the association at $100 per acre. The purchase lies seven miles west of Williams and adjoins the Brim vineyard. It will be planted to Thompson seedless and seedless Sultanas.

F. R. M. Bloomer, a Sacramento horticultural inspector, visited the orchards in the Cosumnes river valley during the past week. He reports that the orchards in that part of the county, as a whole are in good condition, with the exception of a little pear blight which the owners are willing to eradicate.

Observations on Liming of Soils

Continued from page 155

noticeable than on dry soils. The sour humus and organic acids are not only unfavorable to the growth of nitrifying ferments and the root tubercles of leguminous plants but also are likely to dissolve iron and other compounds which are poisonous to microbes and crops.

Water-culture experiments have shown that slightly acid solutions are favorable to the growth of plants, and while most soils possess this character to a slight degree, yet any excess of soluble acid in the soil would be highly detrimental. While most of our cultivated crops seem to need a slight acidity, it is probable that they have the ability to create this condition to a sufficient degree through the medium of the solutions sent out by their roots. This being the case, it would seem that the aim should be to keep soils in a neutral or slightly alkaline conditon so as to favor the growth of root tubercles of the legumes and the desirable soil ferments.

Liming is excellent for correcting any excess of acidity, and is probably the most effective and economical substance for bringing about these other desirable conditions.

Physical Results.

The many chemical changes brought about by the action of lime on soils results in producing physical changes which gives soils new mechanical characteristics. Lime has the power of changing the physical properties of a clay soil and making it more friable and easily cultivated, and putting it in a condition so that water may pass more freely through it. This will make it less susceptible to extremes of dry or wet weather, and make it a good home for the roots of the plants. The action of lime on sandy soils may be said to be the reverse of that on clay soils; that is, it has a cementing action, making such soils stick together and in such a condition that they will hold more water and not dry out so rapidly.

The changes are brought about by what is termed the "flocculation" of the clay and organic particles. It has been found that one (1) part of lime has the power to flocculate and clear 10,000 parts of a turbid liquid, so that is can be readily understood that an application of one ton (35 bushels) of lime would have marked effect on an average soil to the depth of six inches which weighs approximately 900 tons.

Other Effects.

As has been stated, application of lime produces a beneficial effect in giving a favorable medium for the growth of nitrifying organisms and of the root tubercles on the leguminous plants (particularly the clover.) Lime is also sometimes applied to prevent the "Club-foot" of cabbage, celery and of certain root crops. It is sometimes used to destroy larvae, slugs and worms, but experiments do not bear this out and it is doubtful if it has such an effect. Applications of lime are also supposed to favor the development of certain injurious and undesirable conditions such as the scab disease in potatoes.

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Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for greatest batch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be isued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. FILCHER, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

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EGGS FOR SALE—$2.50 per Setting of 15; Two Settings, $4.50; Incubator Lots $10 per 100.

A Few Cockerels For Sale. Prices on application to

Coulson Poultry and Stock Food Company
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S. C. White Leghorn Eggs

For Hatching, from Captain Mitchell's Strain.
Large Birds. Prolific Layers. Large White Eggs.
Order Books Open for 1907 Season.

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Carl C. Curtis, Owner, Pasadena, Cal.

Successor to Captain E. Pryce Mitchell

Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

FEED HOPPERS.

"I WOULD like to try the dry feed method" writes a correspondent, "but I do not know how to make a hopper. Will you please write in the Cultivator just what a hopper is and how to make one."

What a Hopper is.

Webster defines a hopper as "a chute, box, or receptacle, usually funnel-shaped, with an opening at the lower part, for delivering or feeding any material, as to a machine; as the wooden box with its trough through which grain passes into a mill by jolting or shaking; or a funnel through which fuel passes into a furnace, or coal etc., into a car."

The Maine Hopper.

It can be easily seen how there can be a great variety of hoppers, large or small and of almost any shape that suits the fancy of the maker or owner. The Maine Experiment station has a hopper which is merely a long trough, any convenient length, say six or ten feet long, a board about ten inches wide forming the bottom, the sides five inches high to hold in the feed, and the ends sixteen inches high from floor to roof;

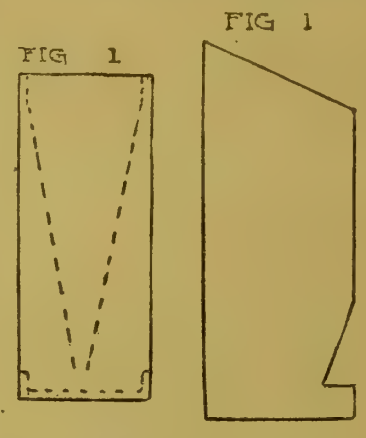

Fig. 1.—This hopper is my own make. The fowls can eat from both sides of it, as will be seen from the dotted lines. It is made from a cracker box and holds nearly two pails of ground feed.

laths are nailed inside the five inch sides two inches apart to enable the hens to put their heads in to eat the food, but preventing them from throwing the grain out. The roof is made separate from the trough; it is two boards nailed together at right angles to make a gable, these boards should be four inches longer than the trough so as to extend two inches beyond the ends, this roof is easily removed for filling the trough by lifting one end and sliding it endwise on the opposite gable end on which it rests.

The Maine Experiment Station has found this trough, or hopper, the best thus far used for saving food from waste and for keeping it in good condition. In separate compartments of a trough of this make the fowls are given cracked corn, wheat, oats, dry-meal mixture, dry cracked bone, oyster shell, and charcoal. Troughs made after this simple pattern are being used by W. C. Stephenson of Gardena in his yards thirty-eight in number, and wth most satisfactory results. I say this because Mr. Stephenson is one of the successful poultry men in our own locality. Coming here a novice in the business four years ago persevering through discouragements in the commercial side of eggs for market, he has made a success of it and now has some exceedingly fine fowls, grand layers and beautiful birds. He is quite enthusiastic over the dry feed method and the "Maine" hopper or feed trough.

Other Styles of Hopper.

In the Cultivator of August 30th last I gave a description of the home made hoppers, which I have been using for some time, these are so simple that any one can make them in twenty minutes. They are made from cheap box (I used a Bishop's chacker box) such as one can obtain at any grocery store and the exact dimensions are not important. I began by making the front edge only three inches deep; this I found was not deep enough, it should be five inches deep. The slanting board down which the feed slides into the trough should end off three inches from the bottom and it should be about the middle of the trough which is the bottom of the hopper.

Another hopper which is called the "Sanborn," because invented and used by Dr. Sanborn, is the result of his experiments with dry feeding covering several years. This hopper he says has more good points and fewer poor ones than the best of the others.

It is made in two parts: First, the box that contains the feed, and second the moving top(or folower) that drops as the food is eaten and also prevents scratching of the contents. The box can be of any size desired, according to the breed of fowl and the number of birds using each hopper. A hopper should not be made larger than is needed to hold a week's supply for the birds that are to feed from it. It should not be made so deep that the birds must get on to the wire covering in order to get the food, Dr. Sanborn says:

"Use to make the boxes, unless boxes are already made, thin boards, half inch lumber, though three quarter inch stuff will not be too heavy. Make the box to hold the dry food sixteen inches square inside and five inches high inside measurement.

The second part of this food hopper is the wire covered frame that rests on the food and drops with the eating of it. It is a "follower," following the food, as it diminishes, to the bottom of the box. Make this of inch square lumber, cutting the parts so that when put together there will be a quarter inch spare space on every side between the frame and the inside of the feed box. After nailing these pieces together as you would a frame for window netting, cover one side with a piece of two inch wire netting, cut just the size of frame. Fasten it to one side of the frame, using plenty of wire staples so as to avoid any sharp wire ends getting loose and injuring the heads of the hens.

How to Use a Hopper.

Fill this feed box nearly full of mixed food, having it higher at the sides than in the middle and drop the "follower" into place. Where to put the hopper is a matter for each one to decide. It can be put on top of a sill of the house so that the side of the feed box is twelve inches above the level of the scratching material. This prevents dirt and straw being scratched into the hopper. The hens step or jump to the edge of the feed box, eat all they desire, then visit the drinking dish, and pass back and forth until satisfied.

More Hoppers.

Another hopper made by a friend of mine is made out of oil cans, he says they are the best and cheapest dry food hoppers he ever saw.

Oil cans are about nine inches square and fourteen inches high. He takes one, lays it on its side, measures a line one inch and a half from the corner and cuts along it the whole length of the can; he then cuts up the inch and a half at each corner and cuts down two inches and a half at each corner, the lower cut (2 1-4 inches) he bends in so there is no sharp edge to hurt the hens and so that any food they may drop from their bills will slide down into the can again. The top edge he turns out to form a little roof. He fills this hopper with a small shovel. He finds that there is no waste of food and it takes but a few minutes to make one.

Another hopper is given in the North West Poultry Journal also made from an oil can. The directions are as follows: Set the can straight up on the work bench and measure seven inches up from the bottom and make a mark, then cut the can in two going all the way around with the tin shears as nearly seven inches from the bottom as possible; throw the upper part away and you have a can seven inches high and nine inches square, but if left as it is the upper edge is sharp and might cut the birds feet so just measure an inch down at each corner and cut with the shears, then turn the sides down one inch. You have now a receptacle six inches high, nine inches

SEEDS

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STOCK FOODS
BEE SUPPLIES

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AND
INDIAN RUNNER DUCKS

Eggs, $1.50 per setting, $6.00 per hundred
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638 Second St., Watsonville, Cal.

Egg Producers

Wright's Strain of Black Langshans

are acknowledged to be the best. At the last San Diego show twelve of our birds had an average score of 93 7-12, by Browning, an Eastern judge, winning five first, three second, and four special prizes. Among the latter was the Harry McIntire Asiatic Cup for best trio. No better egg-producing fowls known than my strain of Black Langshans. A few fine cockerels for sale $5.00 and up. Eggs $2.00 per 13. For particulars, circulars, etc., address

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Phone Main 8890 Los Angeles — ***Pasadena, Cal.***

CHANTICLEER HALL

BARRED PLYMOUTH ROCKS AND BRONZE TURKEYS.

Win once again at the great Los Angeles County Poultry Association show 1907. For full account of winnings, for choice stock or eggs and a square deal write to
LOUIS D. HADLEY, SAN GABRIEL, CAL.

THOROUGHBRED ***S. C. White Leghorns***

They are vigorous and healthy and great producers of large white eggs. They have good size, rich yellow legs and bills. Eggs from special mated pens, $1 per 15, $5 per 100
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EXCLUSIVELY
Send for Sixteen-Page 1906 Catalogue
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McKinley Poultry Farm
BREEDERS OF
Buff and White Wyandottes
Member American Buff Wyandotte Club
Golden Seabright and Pyle Game Bantams
Eggs $3 and $2 per 13. Take San Pedro Inter-Urban Car to McKinley, First House North.
Box 11, R. F. D. : Gardena, Cal

East San Gabriel Egg Ranch

S. C. WHITE LEGHORNS
BARRED P. ROCKS

Eggs for hatching $1 per 13 $5 per 100 We breed from two year old hens, and the best ones of the flock only. No stock for sale. Ranch two blocks south San Gabriel car line.
Swanson & Johnson San Gabriel, Cal.

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Successor to C. H. Robbins
Breeder of White Leghorns, Black Minorcas and Barred Plymouth Rocks. Eggs for hatching, $2 to $5 per setting. Single birds, trios and breeding pens a specialty.
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Eggs for Hatching

Thoroughbred White Rock eggs for hatching at $1.50 for 15 $6 per hundred.
Mammoth Bronze Turkey eggs, 20 cents each. Also a dozen choice W. R. cockerels and two M. B. gobblers for sale.
Jennie R. Frater Charter Oak, Cal.
Home Phone 2170

White Rocks The best kind and the best of the kind. Eggs until further notice, 15 for $1.25 or $5.50 per 100.
White Plymouth Rock Ranch
J. T. DAVIS, Prop. POMONA, CAL.

square. Now take two sticks eleven inches long and about half an inch wide and lay them across each other at the center of each and tack them together with two small nails. Now fill the can about two-thirds full of feed and lay crossed sticks on top; make sure the sticks are loose enough from corner to corner in the can to slide down with the feed as it is eaten.

Best Position for Hopper.

Set the hopper on a bench or shelf in the poultry house in such a way that the fowls cannot scratch straw or dirt into it. (It might be hung on a nail making a nail hole at one side.) You will find that a hen cannot scratch the feed out on account of the crossed sticks, also that she will not stand in the hopper and ditry the whole thing, because it is only nine inches square and she does not care to pick under herself to get the feed; she will stand outside or on the edge and eat like a lady and if you have the water and

FIG 2

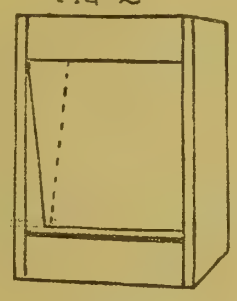

FIG-2

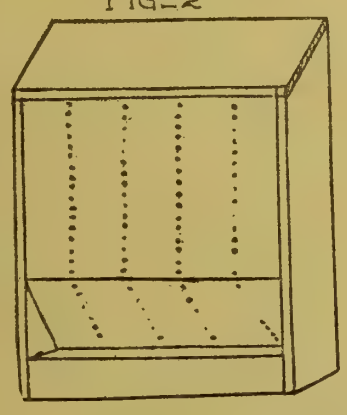

Fig. 2.—The above plan of Dr. Nottage's hopper is from Farm Poultry. The front view shows by the dots the inside divisions, five, in which he places the different foods. The hopper can be made with or without these, the size depending upon the size of the flock and the frequency of feeding. The trough into which the feed falls should be three inches deep and should have a beading on the edge an inch and a half wide to prevent the feed from being scattered out.

grit on the same bench she will move over to that and then down into the litter and then to the hopper again and then perhaps to the nest to lay and at night she is tired, but satisfied and has not over-eaten or loafed on the roost and caught cold and many other ills and diseases, but is vigorous and healthy and ready to commence the same routine tomorrow.

If any of our readers cannot make their own hoppers I would advise them to get some made very much like the pattern of the Maine hoppers. These can be bought at supply houses in Los Angeles, and doubtless in all parts of the state. When I was away, weather bound at Ventura, my home-made hoppers were used for kindling and I bought some cheaper than I could make them and find them more satisfactory than any I have used.

Next week I will talk about the food that it is best to put into these hoppers.

DEATH DEALING DEVICE.

Maurice Chaulin, a French inventor, has perfected a clever apparatus for killing mosquitoes. It consists of a small lamp—electric or oil— hung between two rings, the rings being connected with tiny vertical and parallel chains. These chains are charged with a current of electricity, sufficiently strong to kill instantly a mosquito which touches any two of them at the same time. The light in the lamp, which is entirely surrounded by these chains, attracts these insects to their death.

The Capitol Avenue Poultry Farm of San Jose has doubled its matings this season to keep pace with its rapidly increasing business. Its new catalogue will be of interest to all lovers of fine poultry.

200-250 Egg Fowls | **WHITE WYANDOTTES** | Eggs Ready Now

Great Victories
at Seattle, San Francisco and San Jose of our
Capital Strain

Seattle, 1907, scored by Past President Holden, A. P. A., President's Cup for 10 highest scoring birds any variety American class; Best Collection, Cock, Hen, Cockerel, Pullet, American class; and 9 more prizes.

San Francisco, greatest show ever held west of St. Louis, scored by Secretary-Treasurer Orr, A. P. A. We won **4** Firsts, **all** the National White Wyandotte Club Special, **all** the big local specials, and other prizes.

Winners of the blue at leading Coast Shows in hands of our customers. Also

Columbian Wyandottes

Winners of **all first** and **special** prizes at San Jose. Pronounced by experts the finest they ever saw.

New Catalogue and Mating List **free.** Eggs and stock in any quantities from unrivalled prize and pedigreed matings.

CAPITOL AVENUE POULTRY FARM
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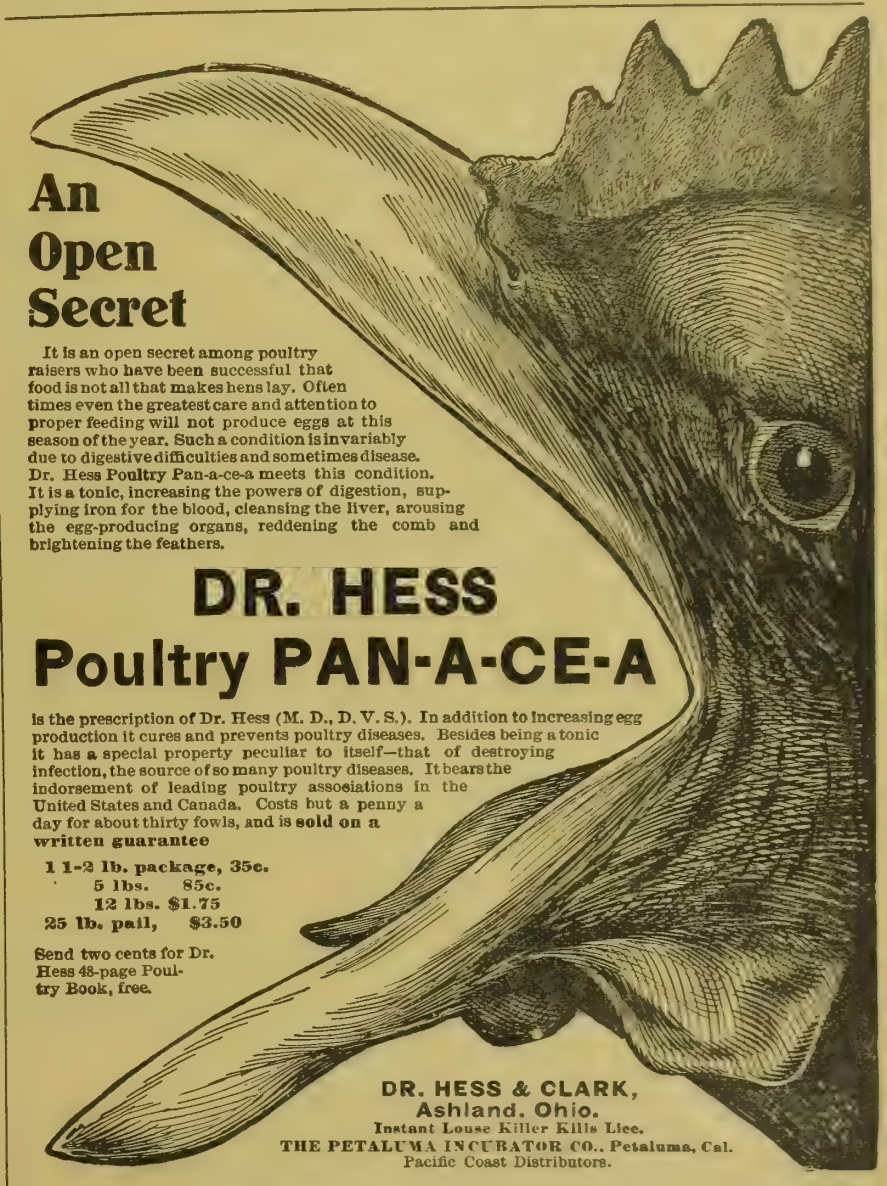

An Open Secret

It is an open secret among poultry raisers who have been successful that food is not all that makes hens lay. Often times even the greatest care and attention to proper feeding will not produce eggs at this season of the year. Such a condition is invariably due to digestive difficulties and sometimes disease. Dr. Hess Poultry Pan-a-ce-a meets this condition. It is a tonic, increasing the powers of digestion, supplying iron for the blood, cleansing the liver, arousing the egg-producing organs, reddening the comb and brightening the feathers.

DR. HESS
Poultry PAN-A-CE-A

is the prescription of Dr. Hess (M. D., D. V. S.). In addition to increasing egg production it cures and prevents poultry diseases. Besides being a tonic it has a special property peculiar to itself—that of destroying infection, the source of so many poultry diseases. It bears the indorsement of leading poultry associations in the United States and Canada. Costs but a penny a day for about thirty fowls, and is **sold on a written guarantee**

1 1-2 lb. package, 35c.
5 lbs. 85c.
12 lbs. $1.75
25 lb. pail, $3.50

Send two cents for Dr. Hess 48-page Poultry Book, free.

DR. HESS & CLARK,
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Instant Louse Killer Kills Lice.
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BEMIS — BARRED AND WHITE PLYMOUTH ROCKS

PRIZES WON At Alameda County Poultry Association Show, Oakland:

21 Regular Prizes.
4 out of the 5 Specials given by the American White Plymouth Rock Club.
Silver Cup for the ***best collection*** in American Class.
Silver Cup for ***best display*** in American Class.
Hines Silver Cup for 10 Best White Plymouth Rocks in Show.

I am able to ***furnish*** the ***best*** birds and eggs at moderate prices. I cannot furnish large lots for incubators.

MRS. FLORENCE E. BEMIS, 1757 NINETEENTH AVE., OAKLAND, CAL.

1907—Los Angeles—1907
Seven Firsts, Ten Seconds, Five Thirds, Five Fourths, Five Fifths, Five National Club Special Ribbons, One Cup
Entries Thirty (30) Thirty Entries

The only breeders that won on White Rocks, Barred Rocks, White Wyandottes, Buff Leghorns and W. C. B. Polish. Showing that we have the best. Stock and Eggs for sale. Send for Circular.

Golden Crest Poultry Ranch ***Randall & Robbins Proprietors*** **Box 412, Santa Ana, Cal.**

HUMPHREY'S

Entire Flock of

Famous Prize Winning

White Plymouth Rocks

HAS BEEN SOLD TO

A. J. LITTLE

This in connection with my present large flock is conceded by breeders and judges as the

BEST FLOCK OF WHITE P. ROCKS

west of the Rocky mountains if not in the United States.

White Rock Cock TROJAN

I am offering for immediate sale

100 Cocks and Cockerels

That will be sold at very
ATTRACTIVE PRICES

400 Hens and Pullets

Will sell singles, pairs, trios, or pens; will have birds mated for best results by expert breeders and judges of White Plymouth Rocks.

Eggs For Hatching

From birds that won as follows, at the 1907 Los Angeles show: 2nd, 3rd, 4th & 5th cocks; 1st, 2nd, 3rd, 4th & 5th hens; 1st, 2nd, 3rd, 4th & 5th cockerel; 2nd, 3rd, 4th & 5th pullet; 1st, 2nd, 3rd, 4th & 5th pens. Special for best 10 pullets in show, all varieties competing.

23 Out of a Possible 25 Prizes

Never in history have so many prize-winners been owned by breeder.

$2.50 for 15, $10.00 for 100

From special matings containing my very best prize-winners, $10 per 15. Correspondence carefully answered. Visitors welcome.

A. J. Little.

Monrovia, Cal.

Get off at Mayflower, walk north two blocks, thence west two blocks to ranch.

POULTRY SHOWS AS EDUCATORS.

The show season just closed has been one of the most remarkable in many respects in the history of fancy poultry west of the Rockies. From Portland on the north to San Diego on the south come reports of successful shows. In almost every instance the entry was larger, the attendance better, the quality of stock higher than previous years.

Shows are not given, as a rule, to make money either for the Association or the exhibitor, but as an educator. First it is necessary to get the public sufficiently interested to induce them to attend, then it is for the exhibitor of the different breeds and varieties to explain the fancy and utility points of his particular breed; in this way the public is educated to see the advantages of standard-bred poultry.

We have in mind many instances where people attended poultry shows merely as onlookers, not being interested in thoroughbred poultry. Yet, after having the good qualities of the various breeds explained to them and seeing the additional price a prize-winner sold for, they decided that perhaps there was "something in it," and before they left the show had either bought stock or eggs.

Best Breed.

Many go to the show to find out the best breed. Hardly a day passes but we are asked which is the best breed of fowls. We always give the same answer: "There is no best breed." Select the one that seems to strike your fancy most favorably and breed to improve both for fancy and utility purposes.

We might start with Asiatics, the largest of all our domestic fowl, hardy and fair layers, good mothers and a splendid bird. Next in size are the Orpingtons and Dorkings, which are considered in England the best all-purpose fowl in existence. The Orpingtons are at present enjoying quite a good deal of praise in this country and are worthy of it, for they have much to recommend them to both fancier and rancher. They are hardy, mature rapidly, are good layers and a fine table fowl. Then comes the American class, comprising the Plymouth Rocks, Wyandottes, and Rhode Island Reds. These breeds are bred for both meat and eggs and the three varieties of Rocks, the eight varieties of Wyandottes and two Rhode Island Reds, give the fancier ample scope for color and shape. All are quite popular and each have their good points. The Barred Rocks are bred most extensively of any breed today and perhaps the hardest to breed up to a high type of exhibition fowl. If you are going in for egg trade alone, we would take the Mediterranean class, comprising the Minorcas, Leghorns and Andalusians. These are considered our bet egg-producers and lay a large white shelled egg, are non-sitters, and good foragers. If we were going in for strictly fancy, we would take up one of the many varieties of Bantams, as almost all large breeds have their counterpart in minature specimens, for which there always is a good demand at fair prices. Most all Bantams stand confinement well, are hardy and breed true to color and type.

So we might go on through the long list contained in the American Standard of Perfection, take up the good qualities of the different breeds and varieties until you would want to put in a pen of each. But our advice is alweys the same; that is, take one kind and stick to it.

A Big Business.

Many who do not stop to think, imagine that the "chicken business" is a small thing. Let us look at the lay of the hen in the United States for last year. We find she laid 1,293,814,763 dozens of eggs, her product amounting to $280,000,000. More than the aggregate value of gold, silver, wool, and sheep during the year. More than the crops of flax, timothy, clover, millet, beans, hay, and straw all told. About $100,000,000 more than the great American hog; and cotton, once king, now yields to the American hen, by over $20,000,000 in her favor.

This is based strictly on the market value, not counting the enormous outlay for eggs for hatching that are sold every season from $1.00 for a sitting to $1.00 each.—F. H. Thomas.

The Largest Poultry Supplies House in the United States

Peerless Chick Feed

Is the Cleanest and Purest Chick Food possible to produce and insures

Health and Rapid Growth in Baby Chicks

GRANULATED MILK—the Pure Protein Food

315 S. Main **HENRY ALBERS CO.** Los Angeles

FAILURE

EGG FOOD A·C·W IT FILLS THE BILL

to raise a large healthy flock of poultry lies in the care and food the chicks get in their early days. 75 per cent. of the death loss in chicks comes from improper food. By actual experiments we found a combination of chick food that is so made that the youngest and weakest chicks can eat and thrive on it. No BOWEL TROUBLE caused by indigestion and irritation of the immature organs if you feed A. C. W. Chick Food. Test this statement by using a sack; for sale at dealers. We have been in business here 14 years and deal in Poultry Food—not HOT AIR.

Agricultural Chemical Works

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Mf rs. of A. C. W. Egg and Chick Food and all raw materials for poultry food.

Incubators? ***Baby Chicks?***

Must Hatch Incubators

Hatch all the fertile eggs and produce vigorous, healthy chicks—two factors that count in the poultry busiuess. We operate the most extensive manufacturing and poultry plant on the coast, and guarantee all our products. If you are in need of anything for the poultry business, write for our illustrated catalogue "B" We have the largest hatcheries in the world, and furnish the best S. C. White Leghorns it is possible to produce.

Order Early and Get he Desired Dating. **MUST HATCH INCUBATOR CO. Petaluma, Cal.**

BLACK MINORCAS

EXCLUSIVELY

Winnings at the great Los Angeles Show, January 1 to 5, 1907:

COCKS—First and Third. **COCKERELS**—First, Second and Third
HENS—First, Second, Third, Fourth, Fifth
PULLETS—First, Second, Third, Fourth, Fifth
PENS—First and Second
CUP for Best Minorca Male, also **PRESIDENT'S CUP**

EGGS FOR SALE

PERHAM & WHEELER

Successors to Geo. R. Albers

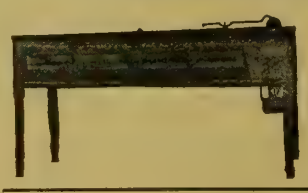
R. F. D. 123, Lordsburg, Cal.

Mission View Poultry Ranch

WHITE WYANDOTTE WINNINGS, 1906

Four Firsts out of 5; 3 Special Ribbons out of 4 and Silver Cup, the specials being given by the National White Wyandot e Club. Won all prizes on Hens but one and all Pullet prizes were won by my stock, one of my customers winning two Cockerels, 1st and 3rd, Cocks 2nd and 5th, Pens 1st, 4th and 5th. **Mammoth Bronze Turkeys and Buff Cochin Bantams, Silver Laced Wyandottes and Lakenvelders** For Sale Cheap. Address

Mrs. C. D Hubbard Box 282 San Fernando, Ca



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They Are the Best on Earth

Principal Incubator Co., Graton, Cal.

Send for New Price List

Chicks Just Hatched

We ship them everywhere. Pure Bred White Leghorn Chicks from the Best Egg Producers in the United States

CALIFORNIA INCUBATOR CO., MAXWELL, MAY 27, 1906.

Gentlemen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come so far and being so long on the way without the loss of a single one, but it is an undisputed fact that such was the case We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. CAMPBELL.

CALIFORNIA INCUBATOR CO., 907 Washington St., Petaluma, Cal.

Emery's Pure Meat Meal

Ask nearest dealer for them, and take no imitations
Write for our free booklet, "Farmers Friend"
Valuable to all farmers and ranchers,

The Pacific Guano and Fertilizer Co. ***San Francisco***
Successors to M. Ohlandt & Co.

Don't believe all we say, but just enough to buy our Poultry Foods.

Emery's "B. B.& B."

Altadena Buff Orpingtons

N. HAYDEN & CO., BOX 1001, PASADENA

You can win with my stock and eggs because I have won and am winning. Matings this year very fine. Inspection invited. Write me your wants. **Eggs $2, $3 and $5 per 15.**

Morse seeds sprout.....
You and nature do the rest

Seed

¶ Special offer—
Collection No. 4
novelties and specialties
from our new catalog

ONE PACKET EACH, of

Burgers Stringless Pole Beans	10c
New Baseball Cabbage	10c
Lettuce—Strawberry	10c
Pea—New British Wonder	10c
Eschscholtzia, Burbank's Crimson	10c
Sweet Pea, Countess Spencer	15c
Poppy, Shirley (Burbank's Strain)	10c
Heuchera, Christata (Burbank's)	10c
8 Packets (regular prices)	85c

ALL FOR
50c

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Send the name of a friend—to get a copy of our 1907 catalog

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171 CLAY STREET
SAN FRANCISCO

Plant Now
Sweet Peas
Varieties one packet each for - 50c
" " " " " - - $1.00
Mailed Free
Pansies
y Special Mixture of Giant Varieties unsurssed by any strain offered, per packet, 25c.
Stocks
Giant Perfection, mixed, per packet, 10c
Theodore Payne
45 S. Main St., Los Angeles, Cal.

Ferry Seeds are not an experiment, but with proper cultivation, they assure success from the start. Users have no doubts at planting nor disappointments at harvest. Get
FERRY'S SEEDS
for biggest, surest, best crops—at all dealers. Famous for over 50 years. 1907 Seed Annual free on request.
D. M. FERRY & CO.,
Detroit, Mich.

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OUR SPECIALTY
A fine assortment and large quantity of Acacias and Eucalyptus.
EUCALYPTUS—
Globulus, Rostrata, Corynocalyx, Rudis, Viminalis, Tereticornis, and other kinds
ACACIAS—
Melanoxylon, Baileyana, Floribunda, Cultriformis, and a dozen others.
Other Shade Trees and Ornamentals for the small planter or the large buyer. Write us your wants.
Sycamore Grove Nurseries
Dant & Warner, 4584 Pasadena Ave, Los Angeles

ROSES 15 for $1.00, postpaid. Field-grown plants, 10 inches to 2 feet. Send for Catalog.
Cedro Nursery, Gilroy, Cal.

THE GENUINE SMITH STUMP PULLERS
W. SMITH GRUBBER CO.
CATALOG FREE—DEPT. 35 LA CROSSE, WIS., U.S.A.

The Ornamental Garden

By ERNEST BRAUNTON

THE CHILDREN'S GARDEN.

ENCOURAGE the children to have a garden for their very own and do not in any wise interfere with it, except to advise and do not be to insistent even in this. Aim to awaken pride and self-reliance in both boys and girls.

The time they have mornings and evenings is more than sufficient for a school child—they will have as well, plenty of time to play or help mama. Do not encourage too large a space or when the hardest times come it may prove a discouragement and have a lasting and blighting influence upon the child's life. Better to do a little and do it well, than have the child learn how to half do it's work.

The child should be allowed to choose the kinds of plants; if all sunflowers are wanted and the child is persistent, let the sunflowers be planted. They may, before the summer is over, prove somewhat of a disappointment, but no schooling is so thorough or lasting in its effects, nor so beneficial all through life as that gained by experience. If the child wishes vegetables and flowers mixed it might be-token a well-balanced judgement—a natural shrewdness such as gave birth to the saying: "Never put all your eggs in one basket." If left largely to its own wishes and resources, the child will learn more in a summer than all the rest of the family combined could possibly teach it, and that learned would never depart.

SWEET PEAS.

The sweet pea is such an unconventional and domestic flower that it is unsuited to formal beds or to an obtrusive position on the lawn. It is one of those flowers which we enjoy the more if it is somewhat hidden from the public view, and is restricted to the more private and personal parts of the ground.

It is preeminently a flower for the backyard. A rear or side border, against a fence or other background, is a good position for it. The plant is always attractive when seen clambering over bushes, but it rarely thrives well when planted close under shrubbery unless it is grown in a box or large pot of rich earth plunged into the ground, to remove it from the competition of the roots.

If one is to raise a considerable quantity of sweet peas, they may be planted in rows and allowed to run up a screen of chicken-wire; or, if one can take the pains to tie them occaionally, a trellis m,ay be made of four or five strands of fence-wire, like a half-size grape trellis. On good soil most varieties will reach a height of five feet or more.

If sweet peas are to continue to bloom throughout the season the soil must be good and capable of holding moisture. A thin, dry soil will not grow good peas. In light soils it is well to apply a liberal dressing of manure to the soil in the fall, plowing it under very early in the spring; and in addition to this a dressing of some concentrated fertilizer in the spring may be useful. But the chief thing is moisture.

The land must be well and deeply tilled, to increase its water-holding capacity. It is ordinarily advised to till the soil frequently after the peas are planted until they begin to bloom, at which time all cultivation should cease. Usually, however, tillage should be continued. The land becomes hard by constant tramping of visitors when the plants are in bloom, and the evaporation from the soil is thereby greatly increased.

A heavy mulch of straw or litter may be placed on the soil when the plants begin to bloom, to conserve the moisture; but if the rows are far enough apart to allow of it, a frequent stirring of the soil all through the season with a horse or hand cultivator will be found to be the most efficient conservator of moisture. The plants also endure dry weather better when thinly planted. We like to have the plants six or seven inches apart in the row.

PLANTING SCHOOL YARDS.

Keep the center of the place free. Do not scatter the trees and shrubs over it. They will be in the way. The boys will break them down. Moreover, they do not look well when scattered over the whole area. When an artist makes a picture with many people in it, he does not place the persons one by one all over his canvas. He masses them. Thereby he secures a stronger effect. He focuses attention rather than distributes it. Most persons make a yard a nursery by planting trees all over it. The same trees and shrubs can be used to make either a nursery or a picture.

Begin with the fundamentals, not with the details. If an artist is to make a portrait, he first draws a few bold strokes, representing the general outline. He blocks out the picture. With the general plan well in mind, he gradually works in the incidentals and the details—the nose, eyes, beard. Most persons reverse this natural order when they plant their grounds. They first ask about the kinds of roses, the soil for carnations, how far apart hollyhocks shall be planted.

It is as if the artist first asked about the color of the eyes and the fashion of the necktie; or as if the architect first chose the color of paint and then planned his building. The result of this type of planting is that there is no plan, and the yard means nothing when it is done. Begin with the plan not with the plants. The school-ground should be hollow—well planted on the sides, open in the interior. The side next the highway should contain little or no planting. The place should be a picture, not a mere collection of trees and bushes.

ROSE CULTURE.

The rose is very modest in its demands upon cultivation and permits of more neglect than most other plants. Perfect flowers, however, are produced only under certain climatic and soil conditions, which can be easily supplied. Roses delight in a heavy but sandy loam, and respond readily to liberal cultivation and fertilization. Well-rotted cow manure and an occasional dose of bone meal is all they require in the form of fertilizer, and it is best applied as a top dressing in preference to spading it into the ground on growing roses, as the feeding fibrous roots in our shallow land are near the surface of the ground and easily cut by deep spading. Roses do not come to perfection in our city gardens, where drainage is often very poor and where the air circulation is imperfect, where the sun only reaches the plants during a short part of the day, and where insects and diseases have full sway. The latter are the unavoidable consequences of unfavorable conditions, and insects will attack a sickly plant much quicker than a healthy one.

THE PALMS.

It was Linnaeus, the great Swedish botanist, who always spoke of the palms as the "Kings and Princes of the Vegetable Kingdom," an appellation fully warranted by their erect carriage and noble appearance.. They certainly are the most ornamental of all plant life, and it is upon them chiefly that we depend for that distinctive tropical appearance of our gardens which is the admiration of all tourists from less favored climes.

The soil and climate of nearly the whole of California is peculiarly adapted to their successful culture, and after being once established, they require but little care to keep them in first-class condition.

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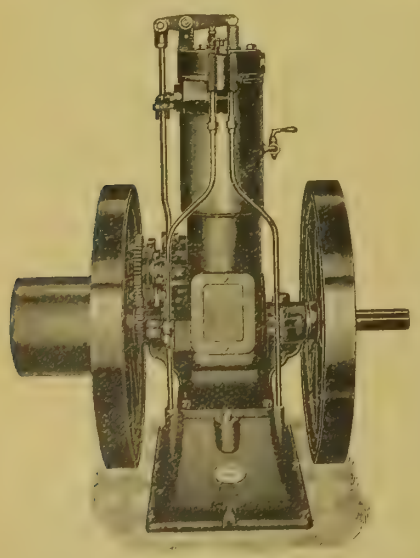

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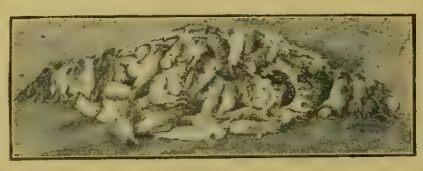

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Queries and Replies

Hemorrhage in Horse.

I have a mare about 10 years old that discharges blood from her mouth, since July she has had four severe attacks; she eats barley hay besides running in pasture; she seems lively enough only after one of these spells; she seems weak and has no appetite.

She has lost about 1-2 gallon of blood at each hemorrhage and coughs at the time.

Can you tell me what the trouble is? —D. N. T., Los Angeles.

Could not tell what causes the hemorrhages without making an examination. The case is peculiar.—(Dr., W. J. Oliver.

Windbreaks.

Can you tell me what is the best tree to plant for wind-break; for quickest growth? Am thinking of setting poplars; which is best, Carolina poplar or silver poplar? Some think cottonwood. My idea is a tree for a wind-break that will grow quick and not sap land too much as blue gums, if I can get one as good. Thanking you for your trouble.—D. F. C.,Modesto.

Carolina poplar is possibly the quickest growing tree of those you name, and will doubtless be the one for you to plant, as it has proven a success in your section. In choosing trees for this, as for any other purpose, the suitability as exemplified in local plantations, should be taken into consideration, as there is no teacher so good as experience.

Indian Runner.

Can anyone tell me where there is a market for Indian Runner duck eggs? They seem to go a begging here.—M. P. S., Corcoran.

I should think your best market would be at your nearest large town. Bakeries (especially the German bakeries) much prefer them to hens eggs as they are larger and richer. I add a teaspoonful of water to the white of each egg and then they beat up lighter than hens eggs. They are very delicate and delicious and have not the coarse flavor of other duck eggs.—Mrs. A. B.

Flower Garden Questions.

In answer to L. D. of Wilmington, would say that rusty iron in the ground by the roots of Hydrangeas, will often make the flowers bloom, but extensive experiments carried on in this country and Europe, have demonstrated that soils containing slate are a stronger contributing influence. Common roofing slate pounded up, and mixed with the soil, will certainly bring blue flowers.

The plant which you speak of as Solanum Erectum properly Cyphomandra betacea, may be procured from almost any nursery advertising in the Cultivator in passing along our street we have noticed quite a number the present season, but do not recall the exact location. The fruits are not at all poisonous, on the contrary, are most excellent as food.

Both Cape jessamine and clematis need shade in order to thrive in our climate. It takes apple trees but a few years to bear from seeds, but it is problematic whether the fruit will be of value. The chances are that it will be of very little value.

Tomato Worms.

Could you give me information in regard to tomato worms? They are a large green worm; I believe they call them tobacco worms. What is the best remedy; also what is the best kind of Eucalyptus tree to plant on the Colorado desert?—S. & M., Thermal.

The tomato worm is so large and conspicuous that knocking them off into a can and afterwards destroying them is more effective than any other method of control.

The question of what eucalypt is best to plant on the Colorado desert is a broad one. We believe the red more generally satisfactory than any other.

Artichoke.

Will you kindly inform me the best variety of artichokes for table use, also the most prolific, also any information you can give me in regard to same and greatly oblige.—A. D. M. Laton.

The best Artichoke for California, is known as the Large Green Paris, a vigorous grower, yielding large buds. "Wickson's Vegetables" says the Artichoke will thrive on any well prepared garden soil, even on heavy adobe, but likes to be well fertilized.

The plants grow readily from seeds, which generally are planted in September or May, but planted later, if irrigation water is not available, and also grows readily from dividing the crown or from suckers of the root crown.

They should be set in rows four or five feet apart, and the plants three feet apart in the row. The flower buds are ready to eat as soon as they are well formed, and before the scales begin to open. When the bud is picked, the shoot on which it grows should be cut clear down to the ground. This will insure more shoots, and consequently a larger crop.

Eucalypts for Shasta County.

Having noticed the article in the Dec. 27th issue of the Cultivator, and other articles on Eucalyptus, I should like to have the following questions answered in your paper as soon as possible:

1. Could some species of Eucalyptus be grown with profit in this section.

2. What species of commercial value would be best suited to this soil and climate?

3. What are the characteristics of the best one or more species; give in order according to the adaptability of each species to localities like that described below.

4. What culture would be necessary to make them grow well?

Elevation about nine hundred feet, (much land quite level.) Soil red, with a good deal of gravel. Depth of hardpan, about 4 to 6 feet. Wild timber, digger pine growing occesionally above one hundred feet. White, live, and black oak growing as high as seventy-five at times. Underbrush; manzannita and chapparral. Extremes of temperature; one hundred and twelve degrees and about twenty-five degrees above zero respectively. Some years snow, and others none.

It is necessary to irrigate in summer to raise good fruit here (peaches etc.) R. K. H., Olinda.

If the temperatures in your section are as stated in your letter, you certainly can grow at least three Eucalypts. E. tereticornis; E. rostrata, and E. rudis. All of these are grown to the north of Sacramento and San Francisco. These are doubtless named in the order of their desirability for your section. This answer seems to cover all questions you have asked, for no culture is needed but to keep down weeds, as with any crop, and if possible to water at times during first summer—once a month will not be too often, and if you wish to rush them one or two irrigations the second summer will help.

Cow Cough.

Will you kindly answer through the columns of your paper what is the matter with my cow?

She is a large cow in good flesh, has a splendid appetite, chews her cud all right and apparently is in good condition. She is dry now and has good care, but she has a cough that seems to trouble her. What might be the cause. —A subscriber, San José

I should ask my family physician to put his ear to her chest and see if the cough is a lung or merely a throat cough. If from the lungs I should have her tested with tuberculin at once. The apparent health of a cow is one of the deceptive features, I have seen apparently healthy cows when opened, have a generalized tuberculosis.—M. E. S.

Fruit Drying.

Will you kindly publish in the Cultivator how to dry fruit: peaches, plums and pears, in particular, and

how to pack them for the market.—L. S. H., Auburn.

I fancy this subscriber never has seen the working of a cutting plant or a packing-house running or she would not think in the space allowed for questions and answers that this could be treated in full.

If the editor of the Cultivator thinks (when the season for drying fruit comes around) it wise and desires me to do so, I will write up the subject in a general way. The absolute particulars are different in each locality and I know no royal road to this knowledge. Personally, if I wish to know anything I go and learn it from experts. I have crippled my right hand until my writing is not readable by doing pruning in the vineyard until I knew how it should be done. The same in packing grapes. I know no other way than to do it until you have mastered the underlying principles.—M. E. S.

Planting Eucalypt Seed.

Will you please tell me at what time and in what manner eucalypt seeds should be planted to give success?—T. G. E., Otay.

The best time to plant Eucalypts as trees, is about the first of March, and to get them ready for this time, the seeds should be planted about the first of September. The trees will then be six or eight inches high at planting time. We fear that success will not attend your efforts by handling them at the present time, and at the proper time we will give full directions for doing the work. For the present, it is sufficient to say, that it is not impossible to grow the trees from seeds at this time of the year. The seeds must be planted in a very light friable soil, containing a good proportion of sand. This should be firmed by placing a board on top of the soil and standing thereon, if the seeds are planted in open ground, or see that the soil is firmly packed down if planted in boxes.

None of these seeds should ever be more than raked in if planted in the open ground, and if planted in boxes, an eigth of an inch of the very lightest soil should be sprinkled over them. The seed bed should be kept shaded until the young trees are well up, after which they should be kept shaded only during the very hottest part of the day, and gradually inured to the sun by the time they are three inches high. The bed must never dry out at any time, and for this reason, may require sprinkling with a fine sprinkler two or three times a day, until the plants are well up.

Brome Grass.

How do you think Bromus inermis would do for pasture grass here?—H. D. W., Santee.

Just how much Brome grass has been used in California, we are unable to say. The most drought resisting grasses which have been tried thus far, are Australian rye grass, and orchard grass. Brome grass is a deeply rooted plant, more drought-resisting than either of the two mentioned, and constantly thrives where there is a decided lack of moisture. The grass forms a closely knit turf, and after a crop of hay is taken off, the aftermath furnishes excellent pasturage. It yields both hay and pasturage in surprising amount, and we believe you would find it advantageous to grow in your section.

In other sections of the arid west, outside of California, it is highly esteemed.

Alfalfa Meal.

Will you kindly answer through the Cultivator if alfalfa meal will take the place of green feed for chickens. —Dedini, Petaluma.

Nothing dried will "take the place" of succulent green feed for either chickens or cows, but alfalfa meal, or good alfalfa hay, makes a fair substitute. I am using the alfalfa meal mixed with the other feed, and find it excellent. In feeding hens (as well as cows), it is well to remember they require a certain amount of "roufage" and the hay or alfalfa meal makes excellent roufage. If the fowls do not at first like it give them only a very little, increasing by one spoonful only each day, till you are giving about twenty per cent. alfalfa meal or hay. —Mrs. A. B.

Spray Grape Vines.

I would like the opinion of the best authority on your staff in regard to the spraying of grape vines with Bordeaux mixture during the dormant period. I know of no one in this vicinity who has ever tried it and have never seen anything written on the subject. I have considerable black knot on my muscats and contemplate spraying in February with Bordeaux, made by the 10: 10: 50 formula, which is the strength I used for my peaches. I would like to know what effect this would have on the black knot, if it would not invigorate all the vines if it is the proper strength to use and if February is a good time to apply it

Any information in regard to this matter will be appreciated.—C. F. C., Dinuba.

Bordeaux mixture will do your vines good, but it will not overcome the black knot. Your formula is all right, even after the vines are in leaf. Straight bluestone water 1 pound to 10 gallons is a good spray material to use before the buds begin to open.—J. W. M.

Plowing Under Weeds.

Are common weeds of any value to plow under as clover crops.—W. H., Dinuba.

Most certainly, especially valuable if containing any legumes, such as burr clover or lupins. Any vegetable matter will add to humus of the soil, but a regularly sown cover crop is by far the best.

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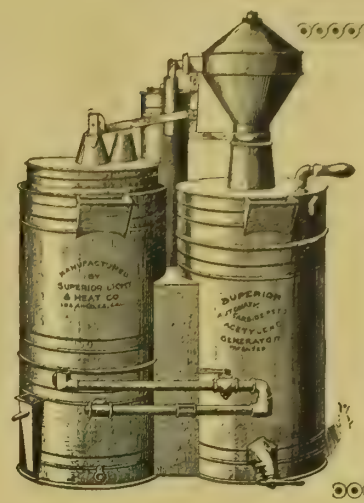

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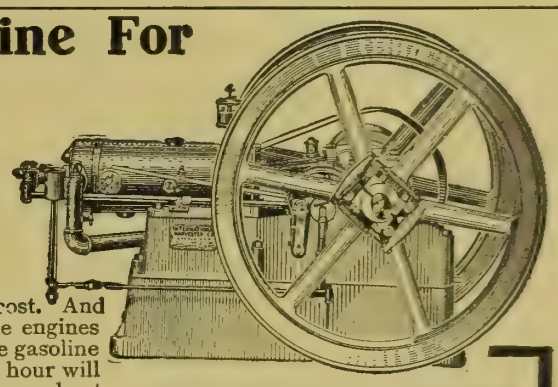

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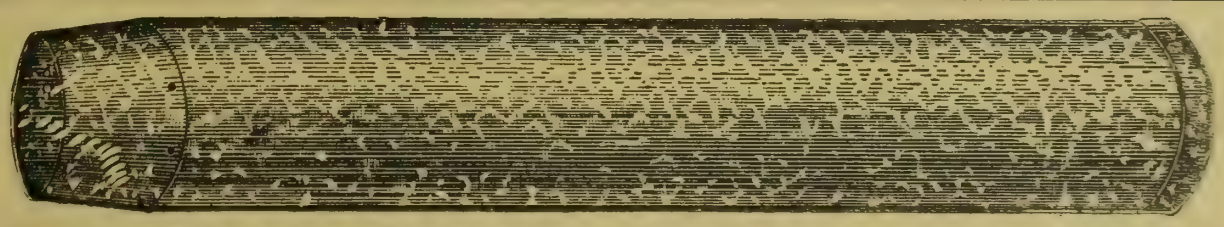

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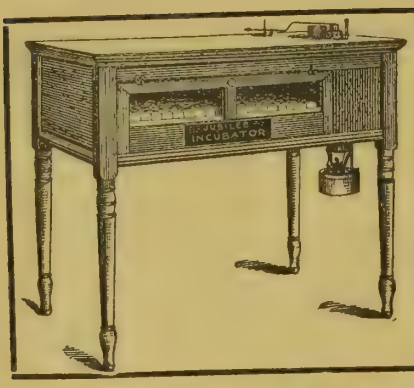

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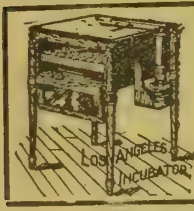

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Household Department

RUDOLPH THE HEADSMAN.

Rudolph, professor of the headsman's trade,
Alike was famous for his arm and blade.
One day a prisoner Justice had to kill
Knelt at the block to test the artist's skill.
Bare armed, swart visaged, gaunt and shaggy browed,
Rudolph the headsman rose above the crowd;
His falchion lightened with a sudden gleam,
As the pike's armor flashes in the stream.
He sheathed his blade; he turned as if to go;
The victim knelt, still waiting for the blow.
"Why strikest not? Perform thy murderous act!"
The prisoner said. (His voice was slightly cracked.)
"Friend, I have struck," the artist straight replied.
"Wait but one moment and yourself decide."
He had his snuffbox—"Now, then, if you please!"
The prisoner sniffed, and, with a crashing sneeze,
Off his head tumbled, bowled along the floor,
Bounced down the steps—The prisoner said no more!

—Oliver Wendell Holmes.

A WAR STORY.

A WOMAN never forgets a lover; a man may forget the woman he has loved.

During the civil war Lieutenant Lawrence Nolan, aid-de-camp to a general of brigade, encamped in Virginia on the grounds of a manor house belonging to a family named Lavalette. The owner of the plantation and his sons were with the Confederate army, but his wife and daughter, Rosalind, were at home. The women, though their hearts were with the southern cause and especially with the father and his sons at the front, had the good sense to treat the Union officers who came to the house courteously. By this means they insured protection for themselves and their property. The command to which Nolan was attached remained in camp on the Lavalette plantation for several months, and, among other officers, he was a frequent visitor at the manor house. Love, which knows no barrier, ignored the fact that Rosalind Lavalette was a rebel and Lawrence Nolan an invader of the homes of herself and the southern people.

It was in the sweet summer time, and life had in it for the young people far more of zest than either had known before. The ring of the bugle and the beat of the drum were heard in the land, uniformed men were coming and going, the air was laden with strains from military bands, while occasionally there came from a distance the booming of cannon. Amid all this the young officer, snatching occasional moments, when off duty, pleaded his cause. Nothing but principle stood in the way of a favorable reply. The girl could not bear to give herself to an enemy of her country.

When the brigade moved, Nolan had only time to ride to the manor house and bid adieu to the girl he loved. Cutting a button from his sleeve, he gave it to her as a souvenir and told her to keep it till he should call for it. "When peace comes," he said, "I will come to ask again for the word I would be so glad to hear now. Till then goodby."

He asked for a parting kiss, but she refused him. "How could I look my dear father in the face," she said, "when he returns if I had been kissed by a Yankee?" Nolan sighed and mounting, rode away.

When the Union army left the Lavalette plantation the place at once sank into its accustomed quiescence. There was nothing but the waving trees, the hum of insects, the songs of birds. Not again did any part of either the Union or Confederate armies visit it. Rosalind Lavalette spent her time comforting her mother for a son and brother who had been killed in a skirmish with the brigade that had been encamped on the plantation. Lawrence Nolan gave the order in the name of his general to send the body to the mother and sister, and, though he believed that his heart would remain forever where he had bestowed it, he gave up all hope that Rosalind would ever be his wife.

When peace came several years later the episode on the Lavalette plantation had become a pleasant dream to Nolan. He was even then but twenty-two, and his impressions were the evanescent impressions of youth. He had had several other later affairs during the war, and these had tended to wear upon the effect of the first. He left the army and began the study of a profession. Occassionally he would be seized with a desire to go south and seek Miss Lavalette, but be feared that if she would not listen to his suit before his corps had killed her brother she would not listen to him after that distressing event. He had not the nerve to ask the hand of one whose hospitality had been thus repaid. He must study his profession for several years and even after acquiring it must wait patiently for an income. And so the matter of his first love gradually slipped away from him.

Forty years passed. Nolan, who had become prominent in his profession was elected to congress. One evening soon after his arrival at the capital he was introduced to a white haired woman of refined appearance and with a southern accent.

"We have met before," she said.

"When? Where?"

"During the civil war, in the south."

Nolan looked at her inquiringly. "That was a long while ago," he said.

"Indeed it was, but I have remembered you, long though it is."

"You can't be the girl who nursed me when I was wounded?"

"No. You were perfectly well when I knew you."

"Nor the girl I met at Richmond at the close of the war—the one over whose home I stood guard one night?"

"Nor than one either. You gave me a keepsake at parting. I have it yet."

"Oh; I know you. I remember well that evening in your garden at Charleston when I gave you a rose and you said you would keep it as long as you lived."

The lady smiled. It was a very sad smile.

"Guess again."

"I give it up," said Nolan, seeing that he was continually geeting deeper into the mire. The lady moved some lace about her neck and showed an army button that formed the head of a stickpin.

"Do you remember giving me that button?"

Two men approached.

"Miss Lavalette," said a voice, "permit me to introduce my friend, Colonel R."

"Lavalette?" mused Nolan, moving on, with a troubled brow. "Who the deuce was Miss Lavalette."—F. A. Mitchell.

HELPFUL HINTS.

Hang Nails.

If the ends of the finger, as far up as the first joint, are rubbed with oil it will prevent hang nails.

Care of the Eyes.

If one must read while lying on the back, the book or paper should be adjusted so that it will be at the same angle with the eye, as it would if one were sitting in an erect position.

To Help Bunions.

Bunions are usually caused by pressure or friction. Relieve the pressure on the joint by placing a disk, made for this purpose over the bunion. If the foot is plunged into hot salt water it will relieve the soreness.

Filing the Nails.

The finger nails should not be filed too closely at the sides, as it tends to destroy the skin which holds them in place and allows them to spread, spoiling their shapeliness as well as making the finger ends blunt and club shape.

Florida has passed a law prohibiting diving for sponges, as the beds are injured thereby.

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AT A BROTHER'S GRAVE.

A remarkable oration, and one that has occasioned some discussion as to Col. R. G. Ingersoll's actual convictions regarding a future life, was his address at the funeral of his brother. Many hold that in it he admits the doctrine of immortality. His adherents have ever claimed that the expressions were only those of a breaking heart reaching out for the hope of a future life.

"My Friends—I am going to do that which the dead often promised he would do for me. The loved and loving brother, husband, father, friend, died where manhood's morning almost touches noon, and while the shadows still were falling toward the west. He had not passed on life's highway the stone that marks the highest point, but, being weary for a moment, he laid down by the wayside, and, using his burden for a pillow, fell into that dreamless sleep that kisses down his eyelids still. While yet in love with life and raptured with the world, he passed to silence and pathetic dust. Yet, after all, it may be best, just in the happiest, sunniest hour of all the voyage, while eager winds are kissing every sail, to dash against the unseen rock, and in an instant hear the billows roar a sunken ship. For, whether in mid-sea or among the breakers of the farther shore, a wreck must mark at last the end of each and all. And every life no matter if its every hour is rich with love and every moment jeweled with a joy, will at its close, become a tragedy, as sad and deep and dark as can be woven of the warp and woof of mystery and death. This brave and tender man, in every storm of life, was oak and rock, but in the sunshine he was vine and flower. He was the friend of all heroic souls. He climbed the heights and left all superstitions far below, while on his forehead fell the golden dawning of a grander day. He loved the beautiful, and was with color, form and music touched to tears. He sided with a weak, and with a willing hand gave alms; with loyal heart and with the purest hand he faithfully discharged all public trusts. He was a worshiper of liberty and a friend of the oppressed. A thousand times I have heard him quote the words: 'For justice all place a temple and all season summer.' He believed that happiness was the only good, reason the only torch, justice the only worshipper, humanity the only religion and love the priest.

He added to the sum of human joy and were every one for whom he did some loving service to bring a blossom to his grave he would sleep tonight beneath a wilderness of flowers. Life is a narrow vale between the cold and barren peaks of wo eternities. We strive in vain to look beyond the heights. We cry aloud, and the only answer is the echo of our wailing cry. From the voiceless lips of the unreplying dead there comes no word; but in the night of death hope sees a star and listening love can hear the rustle of a wing. He who sleeps here when dying, mistaking the approach of death for the return of health, whispered with his latest breath: 'I am better now.' Let us believe, in spite of doubts and dogmas and tears and fears, that these dear words are true of all the countless dead. And now, to you who have been chosen from among the many men be loved to do the last sad office for the dead, we give his sacred dust. Speech cannot contain our love. There was—there is—no gentler, stronger, manlier man."

ON THE SLEEPING CAR.

"Some day whin I am down town I am goin' to dhrop in on me frind th' prisidint iv th' Pullman Company an' ask him to publish a few hints to th' wayfarer. I wud like to know how a gintleman can take off his clothes while settin' on thim. It wud help a good deal to know what to do with th' clothes whin ye have squirmed out iv thim. Ar-re they to be rolled up in a ball an' placed undher th' head or dhropped into th' aisle? Again, in th' mornin' how to get into th' clothes without throwin' th' thrain off th' thrack? I will tell ye confidintially, Hinnissy, that not bein' a contortionist th' on'y thing I took off was me hat."—"Mr. Dooley."

POSSIBILITIES OF POTATOES.

There is no vegetable so universally used on American tables as the potato. From January to December a day rarely passes without its appearance at some meal, but many housekeepers are apt to confine themselves to two or three ways of serving—baking, boiling, frying and mashing. The following recipes will add variety to the list.

Boiled Potatoes.

Cut cold boiled potatoes into slices a quarter of an inch thick, and lay them on a gridiron over a hot, bright fire. Brown them on both sides, sprinkle with butter and salt, lay a bit of butter on each, and eat very hot.

Stewed Potatoes.

Pare, cut in dice, and soak in cold water half an hour. Boil in salted water—enough to cover them. When tender, but not coming to pieces, drain off all the water, and pour over them cream, which has been slightly thickened with corn starch. Season with pepper, salt, and chopped parsley. Boil up once, and turn into a covered dish.

Moulded Potatoes.

Mash or beat up the potato lightly, working in milk and butter, but don't make it too soft. Pack the mixture closely into small cups, which have been wet with cold water, turn out on a greased platter, and brown in a hot oven, glazing with butter as they color. Serve on a flat platter.

Potatoes Souffle.

Bake a dozen large potatoes and, when done, cut a round piece of skin from the side, and scrape out the potato. Add one cup of cream, the yolks of three eggs, a large spoonful of butter, a little pepper, and salt. Beat the whole together, then put in a saucepan, and heat thoroughly. When hot, fill the skins, cover the opening with the whites of the egg, beaten stiff, put them into the oven, and brown the egg slightly.

Potato Pie.

Boil some potatoes, mash until they are smooth, season with salt and pepper, heap on a pie dish, put a bit of butter on the top, and brown in the oven.

Creamed Potatoes.

Put into a saucepan three tablespoonfuls of butter, a small bunch of parsley, chopped fine, salt and pepper to taste, stir until very hot, then add a small tea cup of cream or rich milk, thicken with two teaspoonfuls of flour, stir until it boils, add chopped cold-boiled potatoes, and boil up once before serving. This is an excellent way to use, at lunch or breakfast, potatoes left from the dinner of the previous day.

Potato Croquettes.

Boil half a dozen potatoes, mash and cool thoroughly, sift twice through a colander, then beat well with a fork or eggbeater, and roll lightly into balls. Then roll in beaten egg and powdered crackers, and drop in boiling lard. Turn once only, and do it with a wooden spoon to avoid breaking; if you have not that most useful article, a wire fry-basket.

Celery Walnut Salad.

Pare, core and cut into dice six large tart apples, add two pints of chopped celery and one cupful of minced English walnut kernels. Dust over a teaspoonful of salt, one of paprika and two tablespoonfuls of tarragon vinegar. Mix all together then stir in sufficient stiff mayonnaise dressing to mix well. Serve in cups made by hollowing out pretty red apples.

Horseshoe and Cresent Cookies.

One cupful of butter, one of brown sugar, one of N. O. molasses, one teaspoonful of soda and one tablespoonful of cinnamon. Use just enough flour to handle nicely, roll out, cut into horseshoes and crescents, sprinkle with granulated sugar and bake quickly.

"As I was a-sayin', lady, I got a wife an' five children to support"—

"But how can you support them if you don't go to work?"

"As I was a-sayin', lady, I got a wife an' five children to support me."

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Ensenada Bay

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Eggs from 200-Egg Hens, $1.50 per 15, $6.00 per 100
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Blue Andalusian Eggs, $2.00 per 15, prize winning birds

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At the recent Poultry Breeder's Show we won eight ribbons on eight entries. "The best quality seen here for years, 1st cockerel has the best marked wing we have seen." —Pacific Fancier.
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Eggs for Hatching, $1.00 per 13, $5.00 per 100. High Fertility Guaranteed. Phone Park 682.
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Thoroughbred Single Comb Rhode Island Reds

Pullets and Cockerels.
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C. E. Davis Redlands, Cal.

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Barred Rock
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At $2.50, $3.50 and $5.00 each. Females at $1.50, $2.50 and $3.50 each. Special prices in quantities. Make known your wants. I breed only full blood stock. Eggs at $1.00 to $3.00 per setting. Incubotor lots at $5.00 per 100 and up.

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Very hardy and will do well anywhere. Three plants will supply a family. Strong rooted plants. charges prepaid, 3 for 25c; 75c per dozen, $5.00 per hundred.

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Security Land and Loan Co.
357 South Spring St. Los Angeles, Cal.
Control These Lands.
Excursion Every Tuesday Night

The Produce Markets

Los Angeles Markets

LOS ANGELES, Feb. 13, 1907.

Butter

The butter market is much easier at the lower prices. The fresh product is moving out rapidly. However, not as much butter is being consumed as is possible at this time of the year and dealers are expecting another decline, which is bound to hasten the movement.

Local Creamery, 2lb sq	80
Valley Creamery,	75
Coast, fy,	75
Cooking	23

Cheese

Young America and California hand cheese are firmer.

Cal Young American, per lb.	18½
California Anchor	18
Cal 3-lb. hand	19½
Northern	17
Domestic Swiss	20
Imported Swiss	29

Eggs and Poultry

There was a material weakening in the egg market today and prices were reduced again, making the official selling price of local ranch candled stock 25 cents and northern 24 cents.

Eggs, local, per doz	25
Northern candled	24
Fresh Eaetern	20

The following are average prices which dealers pay to producers for live weight:

Hens, per lb	14
Young Roosters, per lb	16
Fryers	18
Broilers, per lb	20
Old Roosters	8
Turkeys	17
Geese	14
Ducks	14

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lb	7.50
Prime Steers.	5
Heifers	4
Calves, per lb	5
Sheep, ewes, per head	5.25
Lambs, per head	7.50
Wethers	5.50

Potatoes

The receipts of potatoes were some larger this morning and it was predicted that lower prices would prevail within the next few weeks, though prices are now higher than a week ago.

Salinas	2.50
Burbank, Local	2.25
Highland	2.25
Sweets, Yellow, per sack	3.75@4.00

Vegetables

As was expected on account of the opening of the Chinese New Year there were no Chinese in the market, and as a result vegetables were scarce and higher. Few Chinamen will be in the market tomorrow, and those who do come in from the country will have only a very small supply because of their failure to pick today. As a result dealers owning stalls in the city market were stripped of green supplies and are expecting less tomorrow.

Beets, per doz	40@60
Bell Peppers, Green, lb	5
Chili Peppers, Green	6@7
Chili, Dried, per lb	25
Cucumbers, per doz	1.50@1.75
Cauliflower, per doz	40@75
Carrots, per doz	40@60
Celery, per doz.	40
Egg Plant, per lb	15
Garlic per lb	6
Green Onions, doz. bunches	25@30
Lettuce, per crate	1.00@1.25
Lima Beans, per lb	7@8

Onions are weaker. Dealers are offering fancy at $1.35 to $1.50, whereas they sold last week as high as $1.75.

Onions, Aust. Brown, sk	1.50
Onions, Y. Danvers	1.50
Parsnips, per doz	35@50
Rhubarb, per lb	6
Radishes, per doz	20@40
String Beans, per lb	8@12
Sugar Peas, per lb	4@6
Turnips, doz bunches	40@60
Tomatoes, per box	75@1.25
Wax Beans, per lb	16@18

Citrus Fruits

Lemons	2.00
Valencias	1.50@2.00
Navels	1.50@1.75
Grapefruit Seedless	2.50
Grapefruit, seedlings	1.50@2.00

Fresh Fruits

Apples, Bellefluer, per box	1.35@1.50
Apples, Ben Davis	1.40@1.50

Dried Fruits

Evap. Apples, fancy, per lb	9
Apricots	18
Peaches	15
Pears	12@13
Prunes, fy,	5@8

Beans, Dried

Limas, No. 1, per cwt	5.00
Pink No. 1	2.75
Lady Washington	2.90@3.00
Small White	3.25@3.40
Black Eyes	4.50@5.00
Garvanzas	4.25@4.50

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb. cans, lb.	7½@8
Extracted, white	7½
Light Amber	7
Comb, water white, 1-lb fms	16
Light Amber	14
Beeswax	25

Nuts

Almonds, new, per lb	19@20
Peanuts, Virginia	7
Peanuts, California	6½
Walnuts, No. 1, S. S.	14@15

Hay

Barley, No 1	14.50@16.00
Barley, No 2	11.00@12.00
Alfalfa, Local, per ton	14.00@16.00
Plain Oat Hay, No. 1	18.00@20.00
Plain Oat Hay No. 2.	9.00@15.00
Wheat No. 1	14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, No. 1, per cwt	1.40
Barley (to producer)	1.00@1.05
Rolled Barley	1.30
Corn, per cwt	1.40
Cracked Corn	1.45
Feed Corn Meal	1.45
Shorts	1.45
Bran	1.30
Oil Cake Meal	2.75
Cocoanut Meal	1.50

San Francisco Markets

SAN FRANCISCO, Feb. 12, 1907.

Butter.

California, ex. per lb	33
California, firsts	30
California, seconds	28
Packing stock	26

Cheese

New California, fancy	14
Cal. Young American, fancy	14

Eggs and Poultry

Fresh Ranch Eggs	2
Eggs, first, per doz.	2
Hens, per doz., small	5.00@5.50
Hens, large	600@7.50
Young Roosters, large	6.00@8.00
Young Roosters, small	4.50@5.50
Old Roosters, per doz	5.00@5.5
Fryers, per doz	5.50@6.00
Broilers, per doz.	3.00@4.00
Ducks, young	6.00@8.00
Geese; per pair	2.00@3.00
Turkeys, per lb	17@2

Live Stock

Steers, No. 1	8@8½
No. 1 Cows and Heifers	6@6½
Hogs, 80 to 130 lbs.	7½@
Hogs, 250 to 350 lbs.	
Calves, per lb	5@5½
Lambs, yearlings	6½@

Potatoes

Oregon Burbank	1.45@1.75
Salinas Burbanks, ctl	1.50@2.00
Rivers	1.50@1.60
Sweet Potatoes, ctl	2.75@3.00
New Potatoes	4.00

Vegetables

Cucumbers, per doz.	1.00@1.25
Chili Peppers, Green	50@8
Egg plant per box	3.00@3.50
Green Peas, per lb	9@10
Summer Squash, large crate	1.50@1.75
Onions, Red, per sack	1.00@1.25
Onions, Yellow	1.00@1.25
Peppers, Green, Bell	40@7
Rhubarb, per lb	4@
Summer Squash, large crate	2.0
String beans	15@1
Tomatoes	1.50@2.25
Wax Beans	15@

Citrus Fruits

Lemons	75@2.50
Sweets	3.25@3.5
Navels	1.50@2.7
Seedlings	2.50@3.0
Grapefruit	2.00@3.5
Limes	3.50@4.0

Fresh Fruits

Apples, fancy, per box	1.25@2.5
Apples, common, per box	75@1.0
Blackberries, per chest	3.00@4.5
Cantaloupes, large crate	40@1.0
Grapes, Seedless	60@9
Grapes, Black	40@7
Grapes, Muscats, crate	100@1.2
Grapes, Tokay	80@1.1
Plums, per box	75@1.0
Pears,	1.00@1.5
Prunes, per box	60@8
Raspberries, per chest	12.00@14.5
Strawberries, Longworths	7.00@8.0

Dried Fruits

Apples (evap.)	7@
Apricots, per lb	16@2
Figs, white	2½@
Muscatels (loose)	7@
Prunes	2@2½
Peaches	10@12½

Raisins, seeded (1906)	8½@10
Thompson, unbleached	7½
Thompson, bleached	9@11
Beans and Seeds	
Limas, No. 1	4.25@4.40
Pink	1.95@2.10
Large White	2.25@2.50
Small White	2.80@2.95
Black Eyes	4.50@4.65
Red Kidneys	3.40@3.75
Bayo	2.00@2.30
Hops	
1906 Crop (future lb.)	10@12½
Nuts	
Almonds new	17½
Peanuts, Viginia	6½
Peanuts, California	5½@6
Walnuts	15@16
Honey	
Clear White Comb	16½
Amber	14@15
Extracted	5½@7
Hay	
Alfalfa, local	10.00@13.00
Oat	17.00@19.00
Wheat No. 1	17.00@19.00
Wheat, No. 2	15.00@17.00
Grain	
Wheat No. 1	1.27@1.28
Barley No. 1	1.12@1.15
Corn, small yellow	1.50@1.55
Corn, yellow	1.27@1.30
Oats. White	1.45@1.55
Oats, Red	1.30@1.75
Ground Barley, per ton	24.00@25.00
Bran, per ton	20.00@22.00
Straw, per bale	60@80
Feed Corn Meal, per ton	32.00
Cracked Corn per ton	32.00
Oil Cake Meal, per ton	38.00
Cocoanut Meal, per ton	25.50
Calalfa Meal, per ton	21.00
Mealfalfa, per ton	21.00

Citrus Market

New York Market.

NEW YORK, Feb. 12.—The weather has been a series of ups and downs of the thermometer during the week and is now in very unsatisfactory condition. Still, there have been good sales of oranges and California navels have advanced during the week. If even the disagreeable succession of warm and cold waves, accompanied alternately by snow and rain, which blockade streets and make even railroad travel difficult, cannot stop the advance of oranges, there is every reason to believe that with improvement in the brand of weather there will be a market which will give full satisfaction to the seller and joy to the grower.

The pushcart men and the street stands are now displaying oranges in considerable quantity. The present warm weather permits this. If it was snapping cold there would be less money going back to California.

All through the week there has been a good demand for California oranges. The demand for fruit is so active that it is hard to realize that it is winter. It seems more like spring, or even early summer. Some of this activity is due, perhaps, to the fact that other varieties of fruit are in relatively small supply. Another important factor in the situation is that other oranges, at least those which have arrived of late, have not fulfilled the expectations of buyers and they are turning to California fruit for their supplies.

Recent arrivals from Florida have shown the effect of the cold weather which, a few weeks ago, wrought injury. Nevertheless Florida stock has sold well. A car of Deerfield Grove fruit sold at $3.55 to $5.75 per box. But as a whole, prices for Floridas have ranged lower that those for Californias.

Porto Ricos are doing well, the market for them being better than it was last year, but it is none the less a fact that the Porto Ricos will follow the wild orange of Jamaica into oblivion as soon as the cultivated fruit is ready for shipment.

All citrus fruits are selling well from store. There has been, and is yet, a fair demand for substantially all varieties. The market for jobbing lots is steady. Retailers want considerable quantities of oranges and grape fruit and there is good profit in them. The present stagnation in the lemon trade is only a temporary matter.

Today being a holiday no sales will be made, either in this or other eastern markets. Yesterday's sales were as follows, the market was steady, the weather clear and cold. Thirty-four carloads of oranges sold:

NAVELS—	Av.
Sunshine ch J. F. Bowen	$2.15
Trade Mark st O. G. Cash As	1.95
Sweetheart ex fy Riv. Ft Ex	2.35
Eagle ex ch Riv. Ft Ex	2.20
Pine Cone ex fy S. B. Ft Ex	2.35
La Mesa ex fy Riv. Ft Ex	2.60
Royal Knight ex fy R. H. Ft Ex	2.65
Blue Globe T. I. Riv. Ft Ex	2.85
Red Globe T. I. Riv. Ft Ex	2.60
Blue Globe ex fy Riv. Ft Ex	2.65
Stag ex fy A. C. G. Ft Ex	2.20
Pointer ex ch A. C. G. Ft Ex	1.85
Rochinvar ex ch R. H. Ft Ex	2.25
Blue Globe ex fy Riv. Ft Ex	2.55
Butterfly ch Cov. Ex Cov	2.10
Eagle ex ch Riv. Ft Ex	2.10
Claremont fy S. A. Ft Ex	1.95
Blue Mountain fy Riv. Ft Ex	2.40
Riverside st Riv. Ft Ex	2.20
Hawk S. A. Ft Ex	1.85
Bouquet ex fy Cal. C U	2.15
Triumph Cal. C U	1.90
Partridge ex ch Cal. C U	2.20
Partridge ex ch Cal. C U	2.05
Victory ex ch Cal. C U	1.70
Producer ex fy Red. D. P. Co	2.30
Rose ex fy Red. O. G. As	2.45
Rose ex fy Red. O. G. As	2.45
Lion Head ex fy I. L. Lyon & Sons	2.50
SunshineGrove J. F. Bowen	2.25
Sunshine Grove J. F. Bowen	2.15
Alpha fy Boston and S Riv. Ft Co	2.50
Elk ch Boston and S Riv. Ft Co	2.45
Flower orcd run Upland Dis	2.10
Flower ch Upland Dis	2.15
Gypsy Queen T. I. Moulton & Gr	2.75
Carnation ex ch Moulton & Gr	2.55
Slover Mountain Riv. Dis	2.20
Standard Riv Dis	2.05
Independent fy High. Dis	2.50
Independent ch High Dis	2.35
Whittier fy Red. Junction	2.65
Whittier ch Red. Junction	2.55
Orange P., T. I. Collins Ft Co	2.40
Orchard Q., T. I. Collins Ft Co	2.15
Orange P., fy Collins Ft Co	2.25
Orchard Q., ch Collins Ft Co	2.25
Orange P., fy Collins Ft Co	2.30
Orchard Q., ch Collins Ft Co	2.15
Knight fy Ely-Gillmore Ft Co	2.05
Pyramid ex ch Strachan Ft Co	2.25
Orchard orch run Nat. O Co	2.55
Standard st Nat. O Co	2.20
San Rafael	2.55
Wolf st Penn Ft Co	2.40

Cincinnati Market.

The market is advancing and the weather is cold. Eight cars on tracks. Florida Russets, $2.20 to $2.80.

NAVELS—	Av.
Parrot, ex ch S A Ex Pomona	$2.25
Sennenade fy T C Ex Sanger	2.90
Gancy G F fy T C Ex, Sanger	2.75
La Belle st Mutual Orange Dist	2.10
Whittier ex ch S T Ex Whittier	2.30
San Juan E. O. Fruit Co	2.60
Standard st, E O Fruit Co	2.60
LEMONS—	Av.
Greyhound, ch S A Ex San Dimas	3.05
Duck S A Ex San Dimas	2.70
Extra ch T C Ex Sanger	2.50

Pittsburg Market.

The market is steady. Weather cold and snowing.

NAVELS—	Av.
Quail ex ch O K Ex Upland	$2 20
Stag ex fy A C G Ex Azuza	2.45
Pointer ex ch A C G Ex Azusa	2.35
Hunter st A C G Ex	2.00
Stag ex fy A C G Ex Glendora	2.25
Pointer ex ch A C G Ex Glendora	2.05
Pointer ex ch A C G Lateen Spur	2.10
Hunter st Lateen Spur A C G	2.00
Stag T I., A C G Ex	2.15
Pointer T I., A C G	1.60
Hunter st A C G	2.00
Overland ex fy R H Ex Redlands	2.35
Rebecca ex ch R H Ex	2.25
Highlander ex fy Highland F G A	2.25
Cactus ex ch Highland F G A	2.25
La Belle st Highland F G A	2.00
Golden Flower Redlands G O A	2.55
Golden Gate ex ch Red. G O A	2.30
Golden Flower Red. G O A	2.25
Golden Gate ex ch Red. G O A	2.05
Orchard o r National O Co	2.60
Standard st National O Co	2.35
Florencia, F N., J. M. Riley	2.35
Conqueror J M Riley	2.35
Laverne Home Laverne Citrus. A	1.95
Pet ex ch S A Ex San Dimas	2.35
LEMONS—	Av.
Harbor fy C Mohnike Ch. Vista	2.90
Standard st S Mohnike Ch. Vista	2.90

Boston Market.

The market is easier and the weather is favorable. Twenty-six cars on tracks. Thirty cars sold today.

NAVELS—	Av.
Overland, ex fy R H Ex Red Jct	$2.50
Rebecca ex ch R H Ex Red. Jct	2.35
Stork ex ch S A Ex Claremont	2.05
Greyhound ch S A Ex Claremont	1.95
Alpha ex fy, Boston and S Riv Co	2.80
Orchard o r National Orange Co	2.70
Elk ex ch Boston and S Riv Co	2.50
Highlander ex fy Highland F G A	2.55
W Highlands fy Highland Dist	2.50
W Highlands ch Highland Dist	2.45
La Belle st Highland F G A	2.10
Producer ex fy Producers Co	2.45
Cactus, ex ch Highland F G A	2 40
Bronco ex fy West Am Ft Co	2.40
Herald ex ch West Am. Ft Co	2.40
San Rafael	2.35
Redlands' Best BM Ft G Assn	2.30
Redlands Pride B M Ft G Assn	2.05
Pine Cone, ex fy S B Ex Highland	2.45
Arrowhead ex ch S B Ex Highland	2.25
Arrowhead ex ch S B Ex Highland	2.40
Blue Globe ex fy Riv Ex. Riv	2.35
Red Globe, ex ch Riv Ex. Riv	2.20
Rose ex fy Redlands O G A	2.60
Rose, ex fy Redlands O G A	2.55
Columbia, ch National Orange Co	2.50
Native Son st King Ft Co	2.50
Gypsy Queen ex fy Moulton & G	2.40
Carnation ex ch Moulton & G	2.25
La France ch J S Kuns Co	2.45
La France ch J S Kuns Co	2.10
Cyril ch J S Kuns Co	2.10
Liberty Bell ex ch C C U	2.05
Liberty Bell ex ch C C U	2.00
Blossom, ex ch Reds. Mutual O G A	2.00
Ruby fy C C U	1.95
LEMONS—	Av.
Camellia ex fy Reds Mutual O G A	3.25
Gold Finch S S Ex El Modena	2.50
Transcontinental S S Ex	2.55

LINERS

Liner Advertising

Advertisements in Liner Column 1¼ cents per word. Eight words to a line. No advertisement taken for less than 25 cents.

SITUATION WANTED.

A STEADY, RELIABLE MAN OF FAMILY with experience in citrus culture, care of stock, handling of men, etc., wishes a position. Address HAWKEYE, Gen Delivery, Corona, Cal.

MACHINERY.

PUMP PLANT FOR SALE—3 H. P. GAS engine, double acting cylinder, and pipes complete. All in good working order, capacity 2300 gals. per hour. Economical, reliable outfit for a little money. JOSEPH THORNDIKE, Pasadena, Cal.

JEWELRY.

VICTOR BEAUTY PINS—ENTIRELY NEW idea in fasteners for collars, cuffs, dresses, children's clothes, etc. Set of 3, 25c postpaid. Agents wanted. MERRILL & CO., Suite 426, Mason Bldg., Los Angeles, Cal.

PUPPIES.

FOR SALE—SCOTCH COLLIE PUPPIES. Pedigree furnished with every sale. $15 and $25. Write for description. E. B. VARIAN, 539 Douglas Bldg., Los Angeles.

REAL ESTATE.

BARGAINS IN REAL ESTATE IN SANTA Barbara County, 80 acres of choicest valley land, excellent improvements. all fenced and full stream of living water. Also 268 acres of choicest valley land on Santa Ynez river. Also several 40 acre tracts of choice potato and onion land and several 5-acre blocks in town of Lompoc. For particulars address W. W. BROUGHTON, Lompoc, Cal.

FOR SALE.—40 ACRES OF IMPROVED land. Good buildings; free water. W. L. WEAVER, MERCED, CAL.

TREES.

FOR SALE—GRAFTED WALNUTS, PLACentia perfection on wild roots, 8 to 12 feet high, one year old and some two years old. For further particulars address ADOLPH RIMPAU, Anaheim, Cal.

FOR SALE.—500 MISSION OLIVE TREES 20 to 25 dollars per 100, fine stock. H. L. BAUER & SON, 737 So. Spring St.

BERRIES.

HIMALAYA BLACKBERRY, $1 PER DOZ. $6 per 100: Mammoth Blackberry, Loganberry and Lucretia Dewberry, 50c per dozen, $3 per 100.

Adelbert Cooley, R. D. 2, Laton, Cal.

COFFEE.

SPARR'S JAPARA COFFEE-YOU AND YOUR friends are offered an opportunity to buy the finest drinking coffee grown, price 25 cents per lb., packed in 5-lb cans, one dozen in case, 60 lbs., freight prepaid. This is about two-thirds of the usual price charged for ordinary coffee. Send $2.80 for 10-lb. can. Liberal sample sent by mail on receipt of 4 cents postage. F. W. Sparr, 114 East Market St., Los Angeles, Cal.

LOVERS OF GOOD COFFEE—YOUR ATTENtion is respectfully called to the above advertisement. If you enjoy a cup of really good coffee you can buy it from me almost as close as you can buy sugar. Make up an order with your neighbor and write to me. I am a direct importer of Tea and Coffee and can save you money. I ship to all parts of the Pacific Coast and guarantee every pound fresh and pure. Established in Los Angeles ten years. F. W. Sparr, 114 E. Market St., Los Angeles.

POULTRY WANTED.

WANTER—THE ADDRESS OF PARTIES having white guinea fowls or their eggs for sale. Address J. S. DOUGLAS, Bin 7, Bakersfield, Cal.

POULTRY.

HARRISON'S R. I. REDS AND WHITE Rocks. The best out West; 12 awards at Poultry Breeders' Show, including 1st and 3rd Red cockerels, 1st and 2nd Red pullets in a class of 36 pullets; White Rocks 1st pen, 1st and 3rd pullets and 3rd cock. New circular. Eggs $2.00 for 15, $5.00 for 50, $8.00 for 100. LAKE VIEW AVENUE POULTRY YARDS, 757 N. Lake Ave., Pasadena, Cal.

HOLMBY POULTRY FARM, Breeder of S. C. Black, Buff and White Orpington, Barred Rocks, S. C. White Leghonrs, Pekin Ducks, Mammoth Bronze Turkeys, Tumblers and Homer Pigeons, 130 Prenuims won at 4 shows. stock and eggs for sale,—write your wants. ARTHER LETTS Prop., WILL PURDY, Manager, Hollywood California.

ORPINGTONS AND REDS; PEKIN DUCKS—13 prizes on 16 entries also silver cup at "Breeder's Show" 1907. Eggs now ready can't help but hatch winners, we breed them that way, fifteen years' experience counts. Our stock are great layers, rapid growers, top market quality, we guarantee satisfaction GOODACRE BROS., Box 45, Compton, Cal

BLUE ANDALUSIANS—I did not exhibit this year but have better stock than ever A few nice trios for $5.00, also good breeding cockerels for $2 and $3 each. Must have the room they occupy. Eggs for hatching $2 and $2.50 per 14. No fear of inbreeding as we have three strains. MRS. T. R. GRIFFITH, 3111 Walton Ave.

ARMOUR'S BEEF SCRAPS, MEAT MEAL, and Blood Meal for poultry feeding are highest in digestible protein. If your dealer does not handle them write us direct. Circular containing formulae free. THE ARMOUR FERTILIZER WORKS, 736 H. W. Hellman Building, Los Angeles.

SINGLE-COMB WHITE LEGHORNS, FINE white, large, birds; good layers. Hatching and shipping chicks, Eggs for hatching call and see, or write for particulars to MRS D. F. STONER, Ontario, Cal.

FOR SALE.—EGGS FOR HATCHING. From Buff Leghorns and Barred Plymouth Rock fowls, good color, fine layers. Eggs $1.00 to $1.50 per 15. Wm. C. PARKER No. 111 Pacific Ave. Santa Cruz, Cal..

FOR SALE—PURE BRED STOCK, S. C. White Leghorn Eggs. Large eggs, great layers, eggs for hatching only. $1.50 per 15 $6.00 per hundred. RICHARD POWERS. Anaheim. Cal.

FOR SALE—INDIAN RUNNER DUCK EGGS from choice stock $2 per setting of 15, incubator lots at reduced rates at $5 per 100. J. J. OLNEY, Madera, Cal.

FOR SALE—ROSE COMB WHITE LEGhorn cocks and pullets. Must be handsome. VARIAN'S POULTRY YARDS, 25 N. Catalina Ave., Pasadena, Cal.

AT EL PASO, TEXAS, LOTTIE C. ANDREWS of West Third street, Long Beach, Cal., eleven prizes and silver cup at Poultry Breeders' Show, 1907.

FOR SALE—EGGS FROM TWO PENS OF extra fine White Plymouth Rocks, $2 per 13 FRANK H. THOMAS, 1420 Hobart Blvd., Los Angeles, Cal.

FOR SALE—STANDARD BRED BUFF OR jubilee cockerels, full blood, fine birds, price $5.00 and $4.00. C. ROTH, Corona, Cal.

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OF THE BEST QUALITY PLANTS AND BULBS

THE NEW SEED STORE

Everything Fresh and of highest Quality.

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Kellogg Plants

Brandywine plants from Kellogg last spring planted 2x4 feet apart. All blossoms and fruit buds were kept off so that the whole energy of the mother plant was used to make vigorous young plants. Cash returns from Kellogg plants on one acre fruitage bed being over $1500.00. Plants per 1000 $2.00.

Come and see our stock.

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SAN GABRIEL, CALIFORNIA.

HURST SPRAYERS ON FREE TRIAL

No Money in Advance—pay when convenient. The "FITZ-ALL" fits-on-any-barrel or tank. Sprays all solutions. Proven best and most durable. **Guaranteed Five Years.** *Brass Ball Valves Cylinder, Plunger, 3c Strainer Cleaner and 3 Agitators. 200 lb. pressure* A boy can operate it. After trial if you keep it—pay when you can. **Wholesale** price where no agent—**Agents Wanted.** Special Free Offer for first in each locality. "Spraying Guide" and full information FREE. **H.L.Hurst Mfg.Co., 17 North St., Canton, O.**

MY EXHIBIT OF

***WHITE, BUFF AND PARTRIDGE* Wyandottes**

Won 26 Ribbons and Special Prizes at the Poultry Breeders' Show. 1907

R. D. Box D87 **L. E. BERKEY,** Fullerton, Cal.

S.C. White Leghorn Eggs for hatching $5.00 per 100. Large birds.

Good Laying Strain

Take Redondo car via Gardena to Strawberry Park

Stanley Senter, Gardena, Cal.

Eggs for Hatching S. C. Rhode Island Reds and Heavyweight Black Minorcas

$1.50 Per 13

Mrs. L. M. Rucker, R.D.3 Beetle Co. ***Chico, Cal.***

For Sale, Three Thoroughbred Registered

HOLSTEIN FRESIAN BULLS

FIFTEEN MONTHS OLD

GEORGE F. SPENCER, COMPTON, CAL.

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SULTANA **CONCORD**

$3.00 per Hundred $18 per Thousand

Assorted Grapes, many varieties, $1.00 for 15 vines, prepaid.

Elberta, Belle of Georgia and Hiley Peaches, $15.00 per hundred

Deciduous, Ornamental Trees and Shrubs

Pioneer Nursery

Monrovia, California

A Silver Dime

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THE FARM QUEEN.

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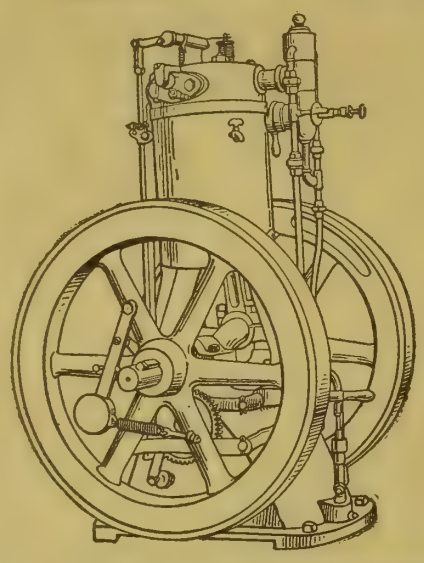
Improved Peerless Engines

Gasoline Distillate Alcohol



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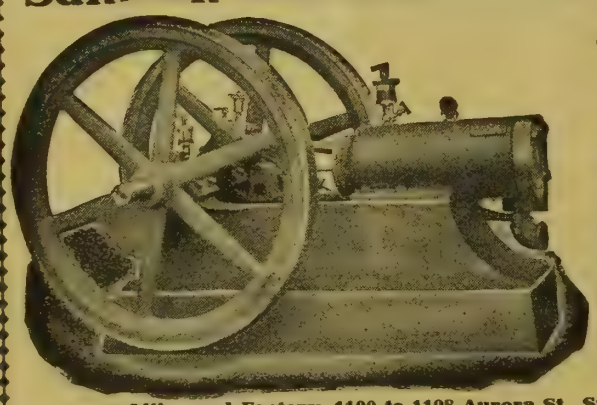

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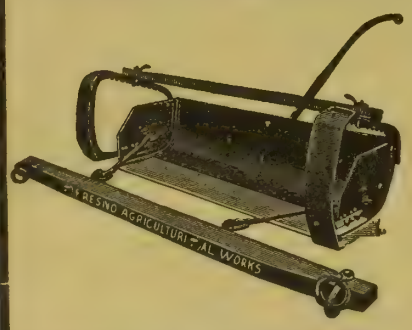
Branch: 941 J St., Fresno



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Our competitors all use the name Fresno to help sell thir scrapers, acknowledging the superiority of the Fresno. We make the only GENUINE FRESNO SCRAPERS.

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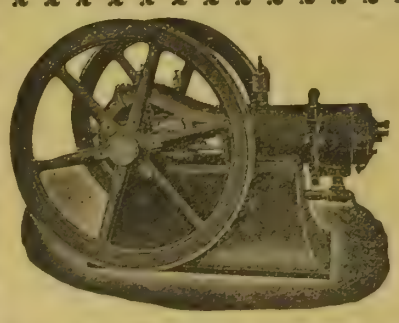

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A First Class Engine at a Moderate Price

Centrifugal Pumps
Three Carloads in Stock

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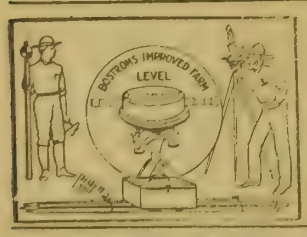

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Used for irrigation and drainage work. Cheapest and best level yet invented for farm use. Has the latest patented improvements in simplicity and usefulness. Can be operated by any one. Price including telescope tripod and target rod $12.50.

PALACE HARDWARE COMPANY,
456 Golden Gate Avenue, San Francisco.
COAST AGENTS.
Send for Circular.

STABLE MANURE

We load this very carefully, eliminating all long straw or refuse. Prompt shipments to any point.

Direct Agents Swift and Company's

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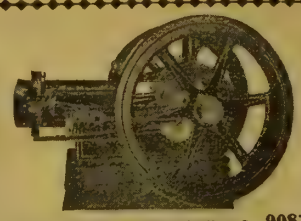
631 Chamber of Commerce Bldg Phones Ex. 315 LOS ANCELES, CAL.



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Highest Awards in California State Fair and Arizona Territorial Fair. Write for Catalogue.

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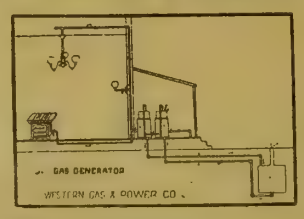
WESTERN GAS GENERATORS



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AUTOMATIC SAFE ECONOMICAL.
Read what Mr. A. W. Foster, President of the California Northwestern Railway has about them:
Gentlemen:
Replying to yours of the 20th inst., I would state that the plant installed for me by the Western Gas and Power Company, on my Hopland Stock Farm, is giving entire satisfaction, and I cannot speak too highly of it. Yours truly, A. W. Foster.
Mr. Foster used an acetylene gas generator before we installed our Western.

WESTERN GAS & POWER CO. 1842-48 Seventh St., Oakland, Cal.

STEARNS GASOLINE OR DISTILLATE ENGINE

Has many points superior to any other engine.

Hundreds In Use
Every One Satisfactory

Built for California cheap fuel.
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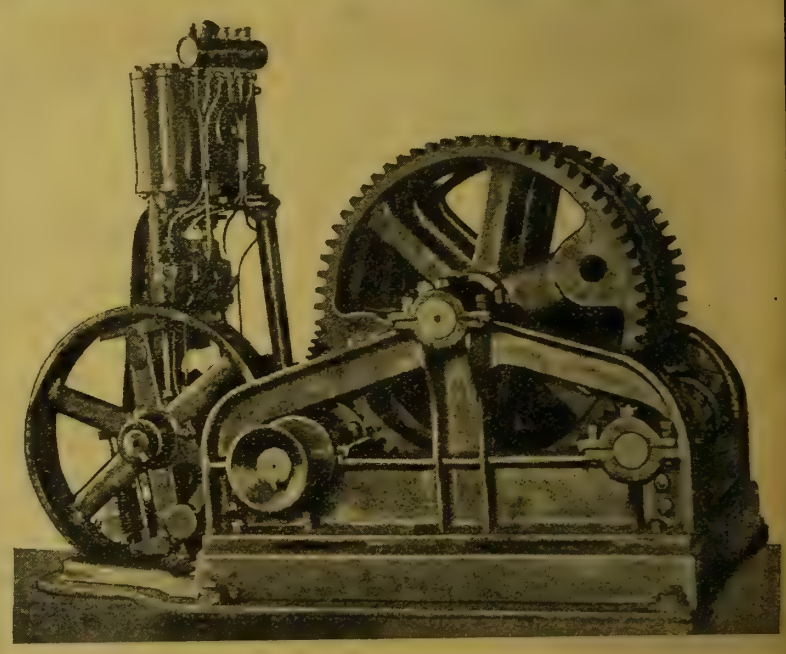
Addison Double Plunger Pump Head



Direct Geared to Steam Engine

One of four pumps installed for Bisbee-Naco Water Company, Naco, Arizona

Pomona, Cal., Jan. 7, 1907.

ADDISON PUMP CO.,
Pomona, Cal.
Gentlemen:—
The 24 Addison Pump you installed for us has given entire satisfaction.
We have 223 feet of rods and a 7-inch cylinder and are raising 18 inches of water to the surface, and are forcing it through 400 feet of 6-inch pipe to a reservoir 13 feet above the pump.
We use a gasoline engine developing about 16 H. P.
We think we have made no mistake in selecting the ADDISON.
Yours very truly,
MARTIN BROTHERS
Pomona, Cal.

It will pay you to investigate the Addison before purchasing a pump. Send for Catalogue B.

Addison Pump Company

Phones: Home 91; Sunset, Black 1551 Cor. 1st and Cypress Sts., Pomona, Cal.

California Cultivator

Los Angeles February 21 1907 San Francisco

Gold of Ophir

Courtesy F. Gilman Taylor Seed Co.

Orange Orchards

3 Years Old, Paying Big Profits

Located in the Best Citrus Fruit Belt in California

$125.00 per Acre

to secure a 10-acre orchard that will pay later on from $800.00 to $1000.00 net profit per year per acre.

Let us tell you how this can be done.

Absolute Security

for your investment and for large profits, is GUARANTEED in this the BEST ORANGE ORCHARD PROPOSITION ever offered. Your profits GUARANTEED by BOND and MORTGAGE on OTHER ORCHARDS of our own.

Only 200 acres will be sold in this way to advertise the tract of 3000 acres we are selling.

Frostless location, ABUNDANCE of cheap water, BEST CLIMATE AND SOIL in the whole State FOR ORANGES AND LEMONS.

Orchards 10 to 20 years old and clearing up to

$1,500 per Acre per Year

in this locality are proof positive of the value of our proposition.

Such an Opportunity

only comes once in a lifetime. Write or call NOW and let us

Show You.

We have the best proposition in the world for good, successful, responsible agents, who can SELL REAL ESTATE either on large salary or commission, or both, and we want the best representative obtainable in every city.

THIS MAY BE YOUR CHANCE.

It costs very little to write or interview us and LEARN of this UNPRECEDENTED chance to PROVIDE an EXCELLENT INCOME for the FUTURE, with COMPARATIVELY NO INVESTMENT of cash, and LITTLE TIME OR ATTENTION REQUIRED.

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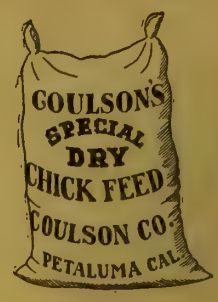

Coulson's Growing Chick Food

Is a mash feed for the growing chicks, designed for feeding when you leave off feeding Coulson's Special Dry Chick Food, composed of articles, each the best in its class, combined in the correct proportion to form

A PERFECT BALANCED RATION

It contains blood meal, meat meal, bone meal, and other articles rich in protein, and the other elements, and is the feed you need to make your chicks excel in size and weight and enable them to become strong, vigorous and heavy-laying fowls.

COULSON'S GROWING CHICK FOOD WINS OUT

San Marcos, Cal, July, 23, 1906.
Gentlemen:

I tried COULSON'S GROWING CHICK FOOD exclusively my first year in business on Brown Leghorns. I sold the cockerels as broilers at nine weeks, averaging 2 pounds, 3 oz. each.

I tried my own mixture of feed the next year and took the same care of the chicks, and sold 75 cockerels as broilers, weighing 105 pounds, making an average of about 1 1-4 pounds each.

Having tested at my own expense the two methods I have concluded that COULSON'S FOOD is superior.

(Signed) J. B. HOOVER.

Coulson's Special Dry Chick Food

Is acknowledged by all The Best and most Reliable Feed for Baby Chicks.

COSTS LESS THAN 2 CTS. FOR FIRST FOUR WEEKS

ONLY HIGHEST QUALITY GRAINS, ETC,, USED

Special Dry Chick Food contains numerous different seeds adapted to needs of the little chicks, besides meal, charcoal, bone and many other necessary articles, each in Granulated form making

A PERFECT BALANCED RATION

CANNOT PRAISE IT ENOUGH

"I cannot say enough in writing in praise of your Special Chick Food. It is just fine. I never saw chicks do so well before."

J. S. SCOTT, Madison.

PULLETS LAY EARLY

"I have fed your Special Chick Food and Growing Chick Food to all my stock with one exception. I tried one lot of 350, and fed them my way of raising chicks back East. Results just fair. The other were fed up to three months on your Special Chick Feed, and the results were a surprise to me. The birds were large and the cockerels out of one lot I sold to the California Market and got a big price, with the request to send on to them at any time I had more cockerels of the same quality."

Respectfully, A. P. WARD,
Calistoga.

USE COULSON'S AND BE SATISFIED

SPECIAL OFFER.

Where Coulson's Special Dry Chick Food cannot be obtained from local dealers, we will ship, freight prepaid to any railroad station in California, 100-lb. sack for $4.00, or 200 lbs. for $7.50, cash with the order.

Coulson Poultry and Stock Food Company

Petaluma, California

California Cultivator

Vol. XXVIII—No. 8 Los Angeles, California, Thursday, February 21 1907 Subscription $1 a Year

Good Roads Legislation for California

Practical Suggestions Regarding a Question of Growing Interest and Importance to Our State

By JAMES W. ABBOTT

IT IS a very remarkable fact in industrial development that neither nations nor states will adopt the policy of constructing first-class roads until forced to it by military or economic necessity. The Romans had to build them in order that their victorious legions might pass with celerity and ease between the imperial city and the confines of their increasing dominion. As their military power waned their roads were neglected and all passed more or less rapidly into decay. After the Romans there was no attempt whatever in Europe to build good roads until about the middle of the eighteenth century, and then only fitfully until the sublime genius of Napoleon planned that system of military roads which was the real renaissance of road building. Napoleon saw not only that he must have roads for his soldiers, but that if the peasants of France were to exist and pay their taxes from the meagre returns of an impoverished soil they must have easy access to markets.

This compelling necessity to build roads, because without them existence even was impossible, which was first clearly recognized in France, was principally responsible for the magnificent standard of roads which is the crowning glory of European civilization.

Eastern Road Building.

The superior attraction and profits of agriculture in the West caused the farms of the Eastern and Middle states to decrease in value and many of them to be abandoned altogether. That condition and that alone induced the farmers of New Jersey and Massachusetts to consent to a plan of taxation to begin the grand system of good roads, which has not only brought back into cultivation and restored values to the abandoned farms, but in many places has brought a prosperity to agricultural regions incredible to people familiar only with the rich soils of the West. The controlling reason why roads are so execrable in the rich valleys of the Mississippi and other rivers today, is because in spite of the waste the soil yields so abundantly.

The same conditions have applied all over the Pacific Coast. Nature has been most prodigal and riches have multiplied to an extraordinary degree, notwithstanding so large a percentage in places had to be sacrificed because of the bad road tax.

But the progress of road improvement teaches no lesson more forcibly than that when communities once actually experience the manifold benefits of good roads they will have them. You might as well try to arrest a stampeded herd of Texas steers with a gentle admonition as to stop people from getting good roads when they once find out by experience and observation how they pay.

A Coast Awakening.

There is an awakening on this Coast. Singular as it may seem it began in old Oregon; Washington caught the fever and now California has got it. It is in the air and in the blood. The people are going to have roads. The stampede has started. He is a wise politician who hears the gathering rumble and recognizes its significance.

Wherever in the United States that need has become urgently recognized the people have gone to the legislature for such laws as would enable them to get what they were bound to have. For the past fifteen years this movement has been on in the states east of the Mississippi river and a great deal of thought, study and experience have gone into the laws. Perhaps the most important principle which has been thoroughly demonstrated is that co-operation is necessary if people are to get roads. So far the National Government, which ought to contribute its just proportion has not been brought in. That will come later. In all the laws framed to date the state, county district and private interests have divided the burden; not in uniform proportion, or even in method at all similiar. Sometimes one or more of

James W. Abbott

Late Special Agent for the Rocky Mountain and Pacific Coast Division Office of Public Road Inquiries (now abolished), U. S. Department of Agriculture.

these interests did not contribute. Often another interest was brought in. The activities of convicts have been utilized to the very greatest advantage. A vast amount of study has been given to the methods of securing the money required from the various interests without present embarrassment, or future hazard. An equal amount has also been given to the best methods of securing the highest efficiency and rigid honesty. With but one or two exceptions the charge of the work to which the state contributed was vested in a department which gave sole attention to roads. The practice of having a state engineer who shall have under him a subordinate highway department has met with little favor and in my judgement is absolutely pernicious. The best results have been obtained by getting good officials for the highway department and retaining the same ones in office, just as a railway company gets a good engineer and retains him.

California in the Rear.

California today is suffering greatly because so far behind the procession in its general road practices. The tourists who were confidently expected to flood the state this winter haven't come in any overwhelming numbers. If this coast had such a system of roads as the state of Massachusetts is building, it would be generally recognized as the most attractive part of the whole world. It has'nt them, and other parts of the world which have, are for that reason getting vast sums of money which this coast loses.

The legislature now in session will be swamped with bills of every kind to afford relief. In determining what should pass and what should not, I would suggest that the first one which should pass should be to establish a highway commission with the same dignity and duties as the highway commission of Connecticut, for instance. The bill should not be framed on new lines, but on such as have been found practical and satisfactory elsewhere.

The bills of next importance should be those providing for raising money by direct taxation. Every man who owns any property should pay something for roads, and this tax should be not only a just, but a liberal one. It is the worst kind of saving at the spigot to waste at the bunghole to scrimp in this direction.

Third on the list in importance will be the bills which provide for incurring indebtedness to build roads. Here the utmost caution should be exercised. Many wild and visionary schemes for saddling obligations upon posterity are being urged, which if carried out will cause regrets hereafter resembling those which follow injudicious marital ventures.

Legislation.

Whatever legislation is enacted this winter, none of it will be perfect. A proper system of road laws for a state is a matter of evolution. I would suggest for consideration that one of the very most important things to do is to arrange so that this state can have the full benefit of the experience of other states along these lines. How would some such plan as this work? Establish a commission of five persons to compile, brief and digest the laws of each New England state, New York, New Jersey, Pennsylvania, Michigan, New Mexico and Province of Ontario, Canada. With the digest append a discussion of the subject and recommendations for the consideration of the next legislature. Let the commission be constituted as follows: The Highway Commissioner of the State (the state has a good one now. I hope it will give him a decent law to work under and retain his valuable services,) a lawyer to be appointed by the Governor of the state, and three commissioners to be appointed by the Governor upon the recommendation of the road supervisors of the state. One of these should come from the Northern part, one from the Central and one from the Southern and each should be a practical road builder. The Governor could invite recommendations from all the road supervisors of the state. From these recommendations it should not be difficult for him to determine the fittest road builder from each section.

The report should be made and published not less than six months before the assembling of the next legislature, and sent to every daily and weekly newspaper in the state. Such a plan would get before the people in digested form the good roads wisdom and experience of other states, and out of it should come legislation suitable to the needs of California.

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Seedlings—A fine lot of large, thrifty trees at reduced prices.
Grafted Trees—1100 Placentia Perfection, personally selected and absolutely guaranteed.
Established 1887. **The Whittier Nurseries, Whittier, Cal.** Home Phone 288

When the others are planting orange trees by the million, why not you plant

WALNUT TREES

I have some very nice ones in all grades left.
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Use Tom Lewis' Fertilizer **Free From Weeds**
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Grafted Walnut Trees
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1000 First-Class Trees, 10 to 13 Feet High

These trees were raised for our own use and are the surplus over our requirements. Growers who have both grafted trees of this variety and common seedlings, say they would pay $5.00 per tree for Placentia Perfection Grafts, rather than plant seedlings. They bear earlier, the nuts are less subject to blight, and sell at a big premium, being unquestionably the most ***perfect nuts on earth.*** Address

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The **Anaheim Evergreen Nurseries**
Tim Carroll, Proprietor **Anaheim, Orange County, Cal.**
The Oldest Nurseries in Southern California. Established in 1868.

We can furnish Phoenix Canariensis and Washingtonia Robusta Palms and Dracaenas in sizes from 3 to 8 feet in carload lots. We also have a fine stock of Pine, Acacia, Rubber, Camphor, Sterculia, Live Oak, Catalina Cherry, Scarlet Flowering Gums, Monterey, Blue and Italian Cypress and other varieties of Ornamental Trees and Plants.
Budded Loquats and Guavas.
Wholesale and Retail. You are requested to call or write for prices.
Nurseries Located 200 Yards West of Loara Station, Southern Pacific R.R.
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100,000 Berry Plants
NOW READY

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17 to 23 Kennan St. Santa Cruz, Cal.

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"MOCOCO"
FERTILIZERS.
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Pamphlet and Price-List free. on application.
Accept no substitute; insist on having "MOCOCO"

Deciduous Fruit Culture

By J. W. MILLS

DECIDUOUS FRUIT PESTS.

DURING past years, the idea was quite prevalent among the deciduous fruit growers of the north, that by keeping the orchards in a thrifty condition, by proper cultivation and pruning, there would be little or no trouble with insects or fungous diseases. The folly of such an idea is plain to most growers, though there are still some who hold to the old idea, and refuse to take precautions that protect and aid even their near neighbors. As an illustration of the folly of such an idea, we may take the black scale, and the orange trees that are in prime conditon at the beginning of the season, will be scaly six months later, and if no insecticide is applied, the tree will be black with scale and smut before another season is passed. Treat these trees for scale with an efficient remedy, but otherwise do not change the methods of culture, and the trees will be clean and healthy again. There is no need of a better illustration .

To bring the case down to the deciduous fruit trees, we may take an example from a Bartlett pear orchard, which we one time had charge of. We thought that the orchard was entirely free from San Jose scale, but were surprised to find that the largest tree, one which was planted in an old oak stump hole, and towered several feet above the balance of the rest of the trees, was literally covered over with scale. There were no infested trees closer than two miles away. The scale had evidently been caried there on the feet of some bird. The height of the tree making a reasonable resting place for a passing bird, and the fact that the scale started in the top of the tree, would indicate that the scale was introduced that way. The fact that the tree was the finest in the orchard would be in such a case the reason why it was infested with scale. The fact that it was the finest tree did not frighten the scale away.

Fungous diseases are just as sure to attack healthy plants, with the exception of those which enter only through some abrasion of the bark. Those that attack the leaves and fruit are natural organisms that must exist on certain kinds of plant food, and this food, no matter if it grows on a healthy or diseased plant, when the proper conditions appear, the host plant must suffer.

ALMONDS.

Almonds are perhaps the most uncertain crop that the California grower has anything to do with, even in those districts to which it is best adapted. A sudden cold wave that will not effect the most tender new growth and blossoms on a lemon tree, will sometimes cause an entire crop of almonds to drop, even when the nuts have grown to be an inch or more in length. As long as the kernel is in the liquid state, it is very delicate, and a frost that is hardly perceptible will make them drop. This dropping can be foretold to a certainty before it occurs, by opening a few nuts. If on the edge of the kernel, at any point, there is a brown spot, and the kernel has not solidified, the nut is sure to drop. If a large per centage shows this feature, it will indicate the extent of the drop.

Almonds are divided into three classes: hard shells, soft shells, and paper shells. There are numerous varieites of each, and while the hard shells are not popular, they are rarely, if ever, excelled in flavor. The Jordan almond is the highest priced nut on the market, in the shelled (kernels only) state, and it is a hard shell. The ordinary hardshell grown in California is not excelled in flavor by any of the soft or paper shells. It will keep for years, and not beocme rancid, while paper-shells will be unfit to eat when held over into the second year The hard thick shell of the former excludes the air, and acts as a seal. The soft shells which have entirely closed shells, keep proportionately longer than do the paper shells, which are usually open along one edge. This permits the air to carry the germ of rancidity, and as a consequence, the nuts must be used within a few months after ripening.

At four years the almonds will produce a fair crop and at eight years should be in full bearing.

Records at the old experiment station at Pomona show that at the age of eight years, the products of the leading varieties were as follows:

Hard shells, 63 pounds per tree. Languedoc, 48 pounds; Maria Dupray, 35 pounds; Golden State, 32 pounds; and Silver Shell 25 pounds. The last four named are soft-shells, and sell for more per pound than the hard-shells on that account. The hard-shell is 78 per cent. shell, Languedoc, 48 per cent.; Maria Duprey, 45 per cent.; Golden State, 30 per cent. This is not a desirable nut, as it runs 60 per cent. double kernels. While it would be popular at philopena parties, it is hard to handle as a confectionier's nut. Nonpareil is the best California almond for market purposes where it bears well. It is a late bloomer, and is liable to get caught with frost when many other varieties such as Languedoc, Silver Shell, Hard Shell, and Lewellings Prolific will escape.

STOCK FERTILIZERS.

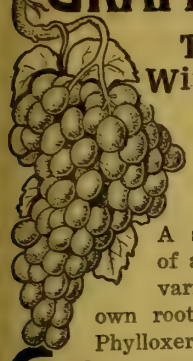
One advantage with dairy farming is the opportunity afforded for building up the fertility. Feeding the farm products to dairy cows enables the farmer to secure a large quantity of manure, while in dairy farming the purchase of more or less mill feeds, like bran, middlings, linseed and cottonseed meal, can be afforded and these add materially not only to the quantity but to the quality of the manure heap. There are few lines of farming where so little of the fertility is taken away and where so good an opportunity of putting it back.

SIMPLE SHUTTER SIGNALS.

A substitute for wireless telegraph, limited, however, in its application, has ben invented by an officer of the artillery branch of the United States army. Simple signals can be given by means of an enormous shutter, with slats a foot wide. These slats are painted various colors and are operated by a lever. The present high cost of the wireless system may give the shutter an important place in the signal service.

To Cure a Cold in One Day.
Take LAXATIVE BROMO Quinine Tablets. Druggists refund money if it fails to cure. E. W. GROVE'S signature is on each box. 25 cents.

GRAPE VINES



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Calimyrna Figs

Our Great Specialty

The genuine Smyrna fig of commerce. A very profitable tree to plant. None genuine without our seal attached to each bundle.

TREES

True to Name

ROEDING TRUE TREES FRESNO, CAL.

Grown under the most favorable conditions for the development of strong healthy trees. The largest and finest stock on the Coast.

Deciduous Fruit Trees

Citrus Trees

Ornamental Trees

All of the standard sorts and every one true to name. With our separate nurseries in different parts of the country, each having its special soil and climate best suited to the different trees, we are thus able to grow the finest stock.

Four New and Valuable

Burbank Creations

Our illustrated pamphlet tells all about them.

Santa Rosa Plum
Rutland Plumcot
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We are the sole propagators and disseminators of the Burbank creations and we will gladly give any information regarding these great specials.

Nut trees, Shrubs, Roses, Palms, Greenhouse plants, Berry plants, Burbank's Crimson Winter Rhubarb, etc.

Our New Catalogue

Our new catalogue is remarkable for its completeness. It contains much valuable information, and is superbly illustrated. Mailed free to any address. Price list on application.

PAID-UP CAPITAL $ 200,000.00

FANCHER CREEK NURSERIES

INC

Geo. C. Roeding Pres. & Mgr.

Box 14 Fresno, California, USA

THE CALIFORNIA WALNUT.

The growing of walnuts is fast becoming a great and prosperous industry in this state, and John T. Harrington, a Colusa county grower, has the following to say urging the planting of walnut trees:

"Again and again we say, plant walnuts. We entreat our own people, and especially our young men to take advantage of the opportunity and not let the priceless plum pass from them. Of all the paying products it is the best. Think of it, young men. How can you invest a thousand dollars in a safer way and which promises surer and greater results? That sum of money will buy you ten acres of choice river land with a surplus sufficient to enable you to prepare and plant the ground and care for the trees for three years. In the first year the trees will grow from the nut to a height from six to eight feet, if properly cultivated. We mean, of course, for you to plant the common California Black walnut, and upon that stock bud or graft the English walnut, and in five years you will begin to reap your reward. The writer has at his home one tree (the older of the lot) which in five years from the graft produced last year nearly a barley sack full of walnuts. And they were all good, merchantable nuts, about sixty pounds, and worth in the market more than ten cents a pound. With one tree yielding that amount, what would ten acres do with fifty-four trees to the acre? Remember that was in five years. What would it be in ten or fifteen years, for they grow in capacity and increase in productiveness right along. There is a tree in Santa Clara valley, which it is said produced last year six hundred pounds. Of course, it is an old tree, but one of the same age in our rich river land—land of alluvial deposits, mixed with decayed vegetable mold, would be a thrifty tree, and produce even a greater quantity.

"The day will come as sure as night follows the day, when our river lands on either side of the great river will be a succession of walnut and orange groves. They are the most valuable products and the easiest handled. The labor problem can never disturb their successful harvest. The winds will help shatter off, and the children can pick up walnuts, while the winds and rains together do not hurt the oranges. Weeks and months may be employed in picking and packing them.

"It may be that the splendid opportunity which is offered our own people to profit by engaging in these excellent methods of making money will be passed by them and it will be given to others— strangers now to us —to reap the great reward."

BLIGHT CANKER.

Every once in awhile we receive from some reader a commumication giving his opinion of the cause of blight in apple and pear trees. Usually the correspondent suggests some mechanical reason for the blight. Now it is no longer necessary for us to guess concerning the cause of this disease. It is perfectly well known. There are different kinds of fungi, causing different kinds of blight. These different fungi families are well known and have been named. One that has proved very destructive is Bacillus amylovorus.

In the main these blight-producing plants are favored by the rapid growth of trees whether the trees be pear or apple. The rapidity of growth helps the minute plant to get a foothold and develop. The plant that produces blight is very small and is a parasite. It lives from the sap in the plant it makes its home. A seed of this minute plant is called a spore. It gets into the tender parts of a leaf or a twig and sends its developing trunk all through the tissue near which it has fallen. When a thousand of these plants exist side by side they use up all the material in the cells. We will suppose a clump of these parasites have developed on a leaf. They quickly exhaust all the sap in their immediate vicinity and leave nothing but bry dead fiber. One such spot would not injure the tree, but when all the leaves of the tree are covered by such spots the leaves are killed and the life blood of the tree ceases to circulate.—Farmers' Review.

IT'S UP TO THE GROWER.

A fruit grower writes the Express: "A big crop is almost certain this year —bigger than for several years. Everybody knows there is not anywhere near help enough in sight to harvest it, and the Japs are getting so independent that they hardly want to work for a white man. What are we going to do about it?" Well, Mr. Fruit grower, it is up to you to make permanent arrangements for help, just the same as you plant permanent trees. You know the help you must have every year, and you know it is scarcer this year than for many years past and not likely to be more plentiful until the grower gets it.—Winters Express.

DECLINE OF THE FOREST.

To gain a clear idea of the change in the condition of the forest that has occurred in the course of settlement it will be helpful to compare its present state with the virgin forest. Picture a forest of unbroken continuity cloaking from summit to plain the mountains on both sides of the great interior valleys from the Oregon border southward to the Tehachapis where the two branches united to extend a long, hook-shaped arm over the uplifted areas surrounding San Bernardino valley and the adjacent plain!

The quality of the forest varied greatly in different localities, because numerous species were confined to certain regions by the natural factors, soil, climate, and elevation. The redwood forest occupied an area along the northwest coast over which ocean fogs drifted in summer; spruce and fir grew in the higher elevations; next below came the cedar with sugar and yellow pine; while nearer the valley, as a fringe to the heavy forest, was a belt of shrubs, or chaparral, intermixed with oak and drought-resisting pines. This magnificient resource, approximately 34,000,000 acres, or one third of the State, was unequaled by that of any other State in either the size and perfection of individual trees or its location on lands unfit for other uses.

The area of forest land in the State today is practically identical with the original area, very little having been turned to other uses. The changes, therefore, have resulted solely in a reduction of the area of merchantable timber. Two causes have operated to effect this change, lumbering and fire. —G. B. Lull.

"Did I understand you to say," asked Miss Woodby, "that you don't go in for society—at all?"

"Quite so," replied Crabbe. "Society is simply a silly school in which every nobody is taught to try to be somebody."

Make Money

Growing Eucalyptus Trees. We can supply the following varieties in quantity:

E. Globulus
E. Rostrata
E. Rudis
E. Corynocalyx
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E. Polyanthema

Our New Illustrated and Descriptive Catalog for 1907 sent to any address for a two-cent stamp.

Armstrong Nurseries
Box 114, Ontario, Cal.

GRAPES

Come into bearing the second year after planting. Why plant fruit trees and wait four years. Our vines are Pedigreed Stock, true to name, healthy, thrifty and graded.

Money Makers:

Red Emperor — True Spanish Malaga
Black Cornichon — Thompson Seedless

Write Us for Special Prices on These Varieties

The Fresno Nursery Company
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GRAPES

MUSCAT SULTANA — **TOKAY CONCORD**

$3.00 per Hundred — $18 per Thousand

Assorted Grapes, many varieties, $1.00 for 15 vines, prepaid.

Elberta, Belle of Georgia and Hiley Peaches, $15.00 per hundred

Deciduous, Ornamental Trees and Shrubs

Pioneer Nursery
Monrovia, California

Kellogg Plants

Brandywine plants from Kellogg last spring planted 2x4 feet apart. All blossoms and fruit buds were kept off so that the whole energy of the mother plant was used to make vigorous young plants. Cash returns from Kellogg plants on one acre fruitage bed being over $1500.00. Plants per 1000 $2.00.

Come and see our stock.

BARBOUR RANCH
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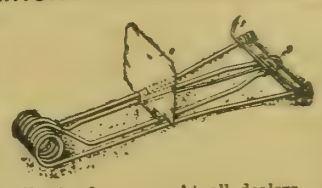

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Choice plants grown from tips only 75cts. per dozen net, $1. per dozen by mail. $5. per hundred; 50 at hundred rate.

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Better Secure Your Stock At Once, as the Supply Is Short.

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Barrels, Half Barrels, and in Kegs.

C. C. C. Anti-Carbolic Tree Spray

This spray is ready for use by simply adding cold water. It assimilates perfectly and forms no sediment. Makes the trees clean and healthy. More effective, and cheaper than lime, sulphur and salt, or caustic soda.

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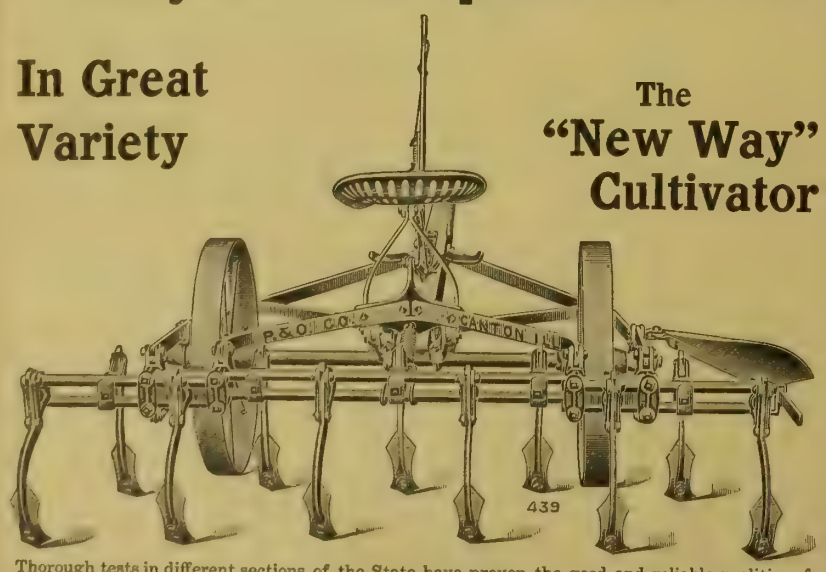

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With the Citrus Growers

By J. W. MILLS

CITRUS ROOTS.

OUR ATTENTION has been called to the fact that the orange trees budded on Pomelo roots are apt to gum the first season. If this is a fact, it should be known and published, for when a young tree gums, it is sure to injure it, and in many cases it kills the tree.

It has occured to us that much good could be accomplished in the matter by informing some one person in regard to the facts. We have made arrangements with Prof. R. E. Smith at the Pathological Station at Whittier, to follow up the matter. A card addressed to him, stating that your trees (whatever stock they are on) are "gumming," or did "gum" at some time, if such is the case, will put your orchard in the line of investigation. It will not only help you, but aid prospective planters. If all those who expect to plant will make inquiries, and send this information to Prof. Smith, they will in a short time receive valuable information in return.

PRUNING THE LEMON.

The old style of lemon growing required that the trees should have tops of large proportions if large crops were to be expected. This required that the tops should reach high into the air. Trees allowed to grow in this manner made a rampant growth and the bearing period was delayed until the trees reached well on to maturity. It is a well established fact that fruit trees of all varieties, as a rule, do not bear large crops until they have passed their period of growth. When this tendency of the tree is satisfied either by natural development or artificial means its natural bent is to produce fruit. Pruning that will discourage a heavy wood growth will have the effect of throwing the tree into fruiting. There are several methods adopted to bring this about. The Baronio system is the most radical and several systems have been envolved from this. The open-center method, open horizontal trimming and semi-Baronio system are modifications.

The method used by the growers before the Baronio system was taken up consisted in suppressing the vigorous growth that carries the top of a lemon tree into the air. The work consisted of cutting back the rank growth, not by cutting the branches square off at any point where it was desired to end such growth, but cutting back to the main branch from which such growth started. This left no stub from which suckers are sure to start. The idea was to throw the greatest strength into the mature wood which had arrived at the bearing stage. This required regular pruning which at the same time kept the tree open enough to admit fruit wood and blossom. Enormous crops of lemons have been produced after this manner of pruning, and some of the most successful growers still prune after this method with perfect satisfaction. With this manner of pruning, the trees gradually increase in size and assume a globular shape. The long, straggling side branches are cut out as fast as they appear, as they do not mature the fruit properly, and the fruit on such branches is invariably scarred up by the wind. By cutting out such growth clear down to the crotch the branches are made so stocky that the wind does not whip them around nor do they need propping even when laden with their heaviest crops of fruit.

The open-center method consists of cutting out the center of the tree so that it assumes something of the shape of an inverted shallow cone. This is done by cutting invariably to a main branch, that is, the limb that is removed is cut clear back to the branch below it. This gives the inverted cone shape, and soon after the pruning is completed numerous sprouts will start up from these exposed branches and if allowed to will soon fill up the space with a perfect broom-like top. After these sprouts have grown enough to show which are suckers and which are fruit spurs, cut out all the suckers. The fruit spurs will be sufficient to shade the top (now nearly horizontal) branches. They will soon burst into bloom and bear fruit. Suckers will continue to grow and constant pruning will be necessary to keep them out. These suckers should be cut close to the branch from which they start. If a stub is left it will send out a cluster of new suckers. New fruit spurs will be thrown out from time to time, and it will necessary to allow all growth to mature enough to show if it is sucker or fruit wood.

These rules are applicable to trees that have arrived at the bearing age and have large tops. The modification of it for young trees is to encourage the growth of the horizontal branches and discourage the upright growth. This is not an easy thing to do and if the trees are not allowed to grow in the usual way till they are three or four years old they will require that a certain amount of branches be tied in place. It must be borne in mind that the branches which are to form the fruit-bearing surface must be cut back to a certain extent to make them stocky. It is easier to convert a half grown tree into an open-center form than to train one from the bud up. We have spoken incorrectly of the nearly horizontal position of branches in the open-center pruned tree. The main branches on such trees assume an angle anywhere between a horizontal to an angle of fifty or sixty degrees. The horizontal trimming is simply a near approach of the open-center to a horizontal position of the bearing or main branches. This style of pruning usually accompanies a tree with a single zone of branches. It is in reality and to all practical purposes the Baronio system.

Mr. A. R. Baronio, an Italian horticulturist of note, introduced into California lemon culture a method of pruning that is named after him. It is evolved from the physological principles which are stated by Mr. Baronio as follows:

1. A tree is most profitable when the sap is most evenly distributed over all its surface, each branch properly covered with elaborated growth all along from its base extending outward in methodical form; and when it is held under absolute control so that the root shall always be capable of feeding the whole top, which is kept within easy reach of the ground.

2. The sap circulates faster through a shoot running straight up in the air than through a branch going out in a lateral direction.

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TREE PROTECTOR
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Strawberry Plants
150,000 Brandywines
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and a few Arizonas
All First-Class Plants
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$2.00 per hundred, $15.00 per thousand. Crandall's Early Blackberry, Cuthbert Raspberry, Lucretia Dewberry, $1.50 per hundred, $10.00 per thousand. All plants carefully packed.
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G. H. Hopkins, Prop., Burbank, Cal.

STRAWBERRY PLANTS
800,000 Brandywines
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20,000 Pride of Michigan
All grown from Kellogg Stock and guaranteed First-Class Plants. Write for prices.
F. P. BALDOSSER, Covina, California

500,000 Brandywine Arizona and Klondyke Strawberry Plants
At bottom prices. All first-class and from the east last spring. G. W. Mullendore, Covina, Cal.

Lady Thompson Strawberry Plants
$1.50 per Thousand
M. J. Rooks - Azusa, Cal.

3. There is little or no elaboration along the length of a straight shoot until the top is reached.

4. There is a larger amount of elaboration along a branch in proportion as it goes out of a lateral direction.

5. There can be no fruitfulness without elaboration, therefore,

6. A lateral branch is more fruitful than an upright one.

7. If a young, vigorous shoot (commonly called a sucker) running up is allowed to persist on a branch, it will draw most of the sap and tend to starve the growth below.

8. A branch may be built slightly crooked and strong in short sections made up of wood of different ages and so pruned that a rush of sap never being permitted it is forced to elaborate a lot of small fruiting growth all along its length.

9. Fruitfulness and excellence are the results of a slow but steady circulation.

10. An over-accelerated circulation tends to foster unnecessary vigorous or rank wood formation.

11. A tree must never be permitted at the top to outgrow its root system, but allowed only sufficient wood formation to keep it growing and all the fruit compatible with its age and strength.

12. Branches should never be so crowded as to preclude the free admission of light and air between them.

13. In order that a tree might have the sap evenly distributed, its main branches must be of equal size and run out at similar angles.

14. A limb which branches off at an acute angle is liable to split at the fork.

15. A limb which branches off at a blunt angle is not liable to split.

16. A limb (like a chain) is not stronger than at its weakest point, and therefore there must be no weak points about it.

17. The strongest points of a limb must commence at its base.

18. Limbs seldom break down by mere weight, but mostly by vibration, which brings all the strain on the weakest point at the fork.

19. Main branches should be perfectly stiff, not affected by any vibration whatever.

It is from the above accepted rules that Mr. Baronio worked out his plan of pruning the lemon. The open- center horizontal system and the semi-Baronio system are all taken from the Baronio idea.

The last-named system is the most severe, as it reduces the tree to a one-decked structure, that is, there is but one layer of branches which makes as nearly as possible a horizontal disc shaped tree. The tree is started with three branches starting from different heights from the ground and held in a horizontal position by being tied down to stones with strong twine till they have become fixed in that position. Following up this plan, sets of two branches are selected from each of these three main branches. These six new branches are tied down to the original three so that they assume a nearly horizontal position. Superfluous suckgrowth is constantly removed so as to force the sap into the frame work of the tree. The operation of bending down upward growing shoots and building the frame work of the tree is continued as the tree expands in size.

One object to be kept in mind is not to crowd the branches so that it will be inconvenient for a man to work between them. As soon as these horizontal branches become established they will begin to throw out fruit spurs and will continue to bear lemons in proportion to the degree in which the sucker growth is suppressed.

When it is desirable to convert a bearing tree that has been pruned in the usual way or not pruned at all into the Baronio style of tree it is done by cutting out all the center, leaving only the lower branches. Should these be too high, say three or four feet, the tree is cut off just above the lowest branches and the suckers that come out from below are used for the new top and those branches are removed.

Some growers modify the Baronio system when converting old trees by simply cutting the top off square at a height of about eight feet and keeping the suckers cut out.

PLANT FOOD.

As for the supply of available plant-food in a soil, this can be determined by a chemical analysis of the soil, though its results may very often be misleading as no method has yet been found which exactly reproduces in the laboratory the action of the natural agents upon the soil. Too much therefore must not be expected of a soil analysis. There is, however, another, by far more reliable way to ascertain the shortcomings of a particular soil—that is by consulting the plant itself. The plant will invariably answer all reasonable questions propounded to it in the way of fertilizing experiments and every agriculturist can readily find out what his soil lacks by making practical experiments as above described.

It is obvious that only such fertilizers must be applied to a certain plant, as are of the most benefit to it and which supply such plantfood in a readily available form, which the particular plant principally requires, and which from the conditon and composition of the soil are the most wanting. The demands made upon the soil by the various crops differ so enormously that it is necessary to use special fertilizers for almost every kind of crop.

The principal plantfoods generally constituting a fertilizer are: Phosphoracid, potash, nitrogen and lime, which are mostly required in larger quantities by the plant that the soil is actually able to supply. All other elements used in the construction of plant life are generally found in all soils in such abundance that they will last for an indefinite time and need no replenishing.

Heavy rains have prevented plowing around Red Bluff, and the acreage of wheat will suffer.

Many large tracts of land have been surveyed into small tracts in recent weeks about Clovis.

Orchardists and vineyardists at Orosi are taking advantage of every clear day to put out trees and vines.

Santa Ana reports that there is a great demand for Valencia orange trees, as well as for other varieties of trees, and that the market for nursery stock is more active now than it has been in many years.

The Flagler Company packed a car of oranges belonging to Ben White of Corona. This was sold at auction yesterday and nets the grower, free from all expenses $1.12 1-2c all grades and sizes and Mr. White has received his money, which makes only fifteen days from the time the fruit was picked until the grower had the money in his pocket.

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Brandywines—The old standard variety of the southwest. Can fill orders by the thousand, hundred thousand or million. $2.00 per thousand. Plants carefully packed and we guarantee their arrival in good condition.
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The orange situation in the Redlands section of the orange belt is becoming critical on account of the car shortage. The famine has existed for a week past. One house which asked for fourteen cars, received two. No cars have been brought into Redlands this week by the Southern Pacific Company, although the usual supply at this season is from 30 to 40 cars per day. The packing-houses are crowded with fruit.

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In this herd, some bred originally by Shields, Pierce and other best breeders and later some by Gen. Shafter himself, are many prize winners. A detailed record of each animal will be sent on application.

The whole herd will be sold in a body if satisfactory bid is received by Aprll 1st. After that individual animals will be sold.

W. H. McKittrick, Executor W. R. Shafter Estate
Bakersfield, California

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Live Stock and Dairy

By Mrs. Minna E. Sherman, Fresno, Cal.

MORE ABOUT HORSES.

THE points of a draft animal are entirely different from a driving horse. We must carefully select a sire that will transmit good muscles, kind disposition, have sound feet and be easily kept in good flesh. Select the breed of draft stock that produce the most saleable form of colts—the colts that every buyer is interested in at once. The average farmer has the misfit horse breed from mares that the traders have not thought worth sending to the cities. The farmer's mare usually is a long coupled, ordinary, weak backed, nondescript animal. She should be bred to the shortest, stockiest drafter of medium size that is at hand. I have found that the Shires and Suffock Punch stallions of medium size are fine for the first cross on these mares, as they nick kindly in almost every case.

Points of Desirable Horses.

I would choose a sire of about 1600 pounds weight—rather a heavier one—one as low and blocky as possible. These nick well on the long flat-sided, half American mares weighing 800 to a 1000 pounds. The colts produced are of express size with an occasional cart horse among them.

The buyers call a horse an "express" when he is about 1400 pounds in weight, has fair action and can trot along with a load. Their use is found, as the name indicates, in the one-horse express and delivery wagons. They need to have agility with a fair degree of good looks.

The cart horse is heavier, chunkier, and is used on wagons that deliver between the wholesale and retail dealers in the cities. He is often called "a big little horse," he is a low-bodied, short-legged, with a deep chest and a powerful puller. Speed is not expected, nor are good looks paid for in excess of his working value.

The best mare or fillies obtained from this cross should be retained on the farm for breeding stock. By the best mares are meant those best in comformation, not those that are heaviest in weight. The broad deep chest, round ribs and short barrel, or closely coupled body with flat bones in the legs. The legs should be well under the horses body, not like the little girls description of a cow, "An animal with a leg at each corner and a tail in the middle of one side."

The angle with which a horses feet strike the ground has much to do with the ease with which he moves a load. The foot is his grip on the ground; he seizes the ground, pushes and moves himself forward, dragging the weight until his other foot takes hold and moves himself forward yet another step.

A crooked hind leg does not give the same power as a straight one. The wear is not as even on hoofs and the horse has not the same chance of endurance. The pastern joint should be of sufficient length, particularly in the hind feet, to prevent pounding. I am sorry to say this is the common fault with draft breeds. A spade-shaped hind foot is common in heavy stock. I rarely see a draft stallion that would not be improved with a little more length in this joint. The agility and quick motion of the thoroughbred comes largely from the length. It has been suggested that the constant drawing of heavy loads has tended to shorten up this joint in the draft breed.

If the shoulders are not flat but ridged a collar will not lie smoothly on them; either a high or too low a wither is equally objectionable. The high withers tend to grow sore under heavy pulling, while the low withers do not hold the collar steady. At a sudden lurch of a load in a chuck hole the collar rises and catches the horse by the throat, he chokes and the wheel drops back into the hole. This has made more balky horses than almost any one other thing.

I saw a horse in a transfer wagon fall choked by a rising collar the other morning in front of the Southern Hotel at Bakersfield. I did not see that the driver recognised why, for he did not buckle tighter the strap running from the bottom of the collar to the belly band. A mule has to be put into a good harness that frames him all over, or else he will not work well, he will not tolerate the dangling straps, but must have things snug. The ranch work horse wears any harness, it matters little if it fits only so it hangs together long enough to complete the plowing.

The Next Cross.

The next sire used on the selected farm mares from the first cross can be a heavy draft stallion and a reasonable amount of first class heavy draft horses will be the product. The reason for not beginning with the draft stallion of heavy weight at first is that a large per centage of culls result, colts that are weedy, having big heads and feet, long slat like bodies, with little heart girth and weak as workers. They are too homely for city work in delivery wagons, too light for heavy work anywhere.

The temptation to breed defectively formed mares that are not saleable is often too much for the farmer. If he must breed these weedy ones, then breed them to the small chunky stallion. One questions why two crosses of the heaviest blood will not produce as good colts as a first cross with the smaller draft stallion and then a second cross with a heavy stallion.

The trouble lies here—the long backed mare is bred to a long-backed stallion, as the big stallion has necessarily a longer back. The back in the colts remains long and defective, while if it is shortened up in the colts after the first cross to the proper proportion; then when the larger horse is used the long back falls in proper relation to the rest of the frame and the length is properly proportioned.

In the second generation, the farmer must decide what he means to breed; Percherons, Clydes, French or German drafters, or perhaps Belgians. All are good as breeds, but he must chose one and stay by it, until he has perfected a type that will bred uniformly. When his geldings come so that they match reasonably well, then he will have colts that will have a commercial standing. The buyers soon know where the good horses can be found, and it will not be necessary to have the annoyance of horse traders coming to his door.

We say our horses are such a price and the buyers look at them; if they

rish thm, they purchase; if they hink they can do better elsewhere, hey go there, and so the matter ends rithout annoyance or any of the disgreeable horse bartering.

The Larger breeds.

Now in the larger breeds of draft orses the points of excellence differ. n breeding to a Shire or Belgian—he top line will be perfect; round ibs also will follow the blood. In the 'ercheron the legs, actions and disosition will be found of the best. 'he Clydes are great feeders and rarely ave sickness.

I speak, as will be noticed, more of hires and Percherons, not because hey are best of the draft breeds, for ll have great merit. I know these wo breeds from personal experience. believe it is poor policy to mix stablished breeds and for this reason elieve in staying by the breeds that he mares carry the blood, of so remain a breeder of Percheron and hires.

A Percheron was the only recorded tallion in the neighborhood when I egan as a farmer, twenty one years go. I began to raise horses as soon as owned a ranch. Yes! I am now f age as a "farmeress," last month reached my majority. It has been full and happy life, I do not regret hat my life lines have fallen on the arm rather than in society, that it as been passed among a people that work rather than among those that play. The man in blue jeans is wholesome and true. He may not be cultured, but he is sterling. He respects womanhood, and can be relied upon to help a woman to the end. The hand hardened with daily toil is an honest one. His mind is not soaked with sophistries and he sees life as a tangled wed in which much is good, mingled with the weakness of mankind.

MILK VEINS SUPPLY THE UDDER.

The interesting subject of the use of the milk veins which lead from the belly of a cow to the udder, is thus discussed by Hoard's Dairyman.

A few years ago we thought we would see what percentage of the farmers out of one hundred believed that the large veins on the belly of the cow, which are called milk veins, were really veins for conveying milk to the udder. So without expressing any opinion of our own on the matter we simply asked the following question of one farmer after another:

"Why are those veins called milk veins?" The answer from 90 out of the 100 was in effect like this: "Because they carry the milk to the udder." Of the remaining ten, five could not give any answer except to say that they did not know, while only five had the right idea, viz: that these veins were in reality great blood vessels returning blood from the udder to the heart. Afterwards we conversed with several of the original ninety on the subject, and stated to them what science really had found out and as to the purpose of those veins. In almost every instance, however, we found them adhering steadfastly to their former ideas. One of them declared that he had cut into the veins on a dead cow and had seen the milk flow out.

Now, this is but one of several errors concerning the physiology of a cow which are strongly believed in by farmers. To be really intelligent and well informed, to believe in the truth and a mass of errors, on any question concerning living beings, one must make a study of them. Can we afford as farmers to be harboring a mass of unfounded notions about so important an animal as the cow?

If we believe the truth as it really exists, that these veins return the blood to the heart, it will teach us several valuable lessons:

(1.) It will show us the enormous circulation of blood that is required to produce milk in a good cow. (2.) It will teach us that we must take good care of the udder, for with such a heavy influx and outpour of blood the organ is very sensitive to abrupt changes of heat and cold. This is the reason that cows are very apt to have garget by lying on cold ground late in the fall; also by lying on stone or cement floors. (3.) It will teach us the folly of tying cows in the common stanchion whereby it is easy for a standing cow to step over onto the teats or udder of the cow that is lying down next to her. We should wisely provide a system of tying cows in the stable that will prevent such serious injuries. (4.) A knowledge of the true physiology of the udder will teach us the importance of careful and gentle usage of it in milking and the great importance of attending to any derangements at once, which may take place.

There is no reason on earth why every farmer who keeps cows should not be a well informed man on the physiology and function of the dairy cow. Such knowledge would prove a very profitable guide to the wisest and best methods of handling the cow.

We should always remember that the highest profit from cows can only come through the use of the best judgment and the best methods. To have good judgment we must have sound knowledge, for as said the ancient proverb:

"Woe unto him who believeth a lie."

PIGS ON THE FARM.

The question of pigs on the farm should be gone into by every farmer. Some people may regard the injunction as unnecessary, but it is a fact that one does come across some farms destitute of any pigs. This is a mistake, especially where there are dairy cows, with the usual output of skim milk, when from cheesemaking, and other things which could not possibly be used to greater advantage than in feeding pigs. No one who has noticed the average piggery will attempt to deny that there is room for great reform in the matter of housing and general treatment of the pig.

As a rule, pigs are kept, fed and cleaned in a more or less neglectful fashion. Swine fever, that dreaded plague, would be almost, if not altogether abolished, and with it many restrictions that are often laid down, if there was systematic cleaning and housing, proper feeding, and no overcrowding. As it is, the careful pigkeeper, who looks after his animals properly, suffers with the neglectful one, who is really a party to the mischief.

Good alfalfa hay is nearly equal to good bran, ton for ton. You can raise a ton of alfalfa cheaper than you can buy bran. If you live where alfalfa will not grow, then raise clover, or cow peas, or vetch. Raise those crops you know will do well in your locality.

For a Good, Practical Milking Machine see the O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

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10 lbs. extra large fancy Santa Clara Prunes worth 10c to 12½c lb. 70c
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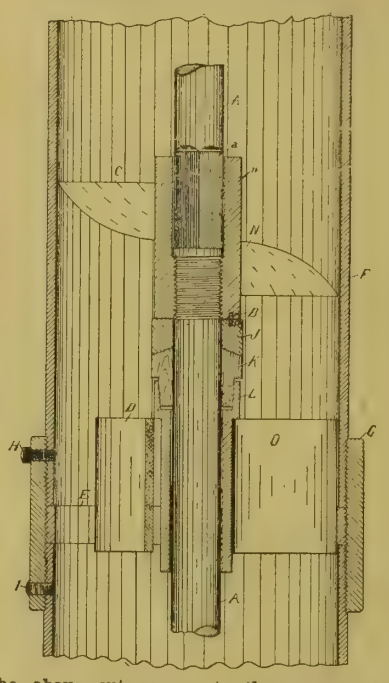
Absolutely Grit Proof



The above cut represents the screw guide of the Propeller Pump, with one of our GRIT PROOF bearings. This consists of metal collar "J" and maple collar "K", which form both end and side thrust bearing; each carrying 5 feet of the load, instead of letting it all rest on the ball-bearings in the pump head as in the past; and is so constructed as to prevent any vibration of the shaft, confining all the possible wear to the two collars "J" and "K", and being GRIT PROOF are practically indestructible. Write for full particulars.

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Patentee and Manufacturer
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Queries

Rough Milking?

Can you tell me what is the trouble with my cow? During the summer she began stepping around while I was milking, as though the operation was painful. I attributed it to chapped teats, and tried dry milking, then vaseline, but the trouble slowly increased till now she keeps her hind feet constantly going up and down during milking. Would like to kick, but is too well brought up.

The udder does not seem sore; is not swollen or inflamed, but the squeezing or pulling of the teats seems painful. At intervals, for the past three months, there have appeared small pink spots on the teats as though the skin was knocked off, but would soon heal up to re-appear in a day or week or more.

Lately there has been small lumps appearing at the base of the teats or between them on the udder; soon break and heal up. Only two or three of them have appeared and are no larger than the end of a lead pencil.

If she keeps growing worse will be unable to milk her. Her milk seems to be all right, likewise herself, though she seems a little thin in flesh. These spots and lumps dont seem to cause the uneasiness as they appear only occasionally.—Subscriber San Martin.

Try castor oil on the teats, I fear from the little intimation given of wet milking that you are not particular about cleanliness. In many places the health officers refuse to allow wet milking. From it I further judge that if you had been a gentle milker, one with the smooth velvet suction, instead of having a grasp on the udder, these troubles would not have arisen.

Begin by washing the udder clean and greasing the sore spots with castor oil. Wipe the udder and then pare your nails carefully, wash your hands and dry them and sit down to milk. Go slowly and milk gently; if the cow is restless give her a little bran to eat and stop the milking for half a minute. The reason for the washing is to avoid infecting other portions of the udder with the trouble. The lumps and spots appear occasionally only because the hurting pressure has not been severe enough to produce them at other times. Those between the teats were infecting from the others in all probability.—M. E. S.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

Overeating.

My cow, three years old last fa was picketed on volunteer oats; wou occasionally get too much and a dull and persist in grunting, thou not what might be called sick. H had no oats for about two months. feed alfalfa hay, nice, fine whe straw and about one gallon roll barley twice a day and she now h occasional spells as indicated abov

She vomited this morning, seem better tonight and gave quite a goo mess of milk. She has comfortab quarters.

What is the matter with her, ar what can I do for her?—T. B., Oak dale.

I presume this cow is over-eatin weigh her out not to exceed fiftee pounds of the alfalfa hay and th same amount of wheat straw. Divid into two parts and feed it with he barley. Then let her alone unt night and give the rest of the fee

If she is a very large cow and be gins to lose flesh or drop in her mill add a little more to her ration, in th hay line. I never like to feed a much rolled barley as that to a cow half of it with a couple of pounds o corn would make a more digestibl feed, or else half barley and hal bran would do better.—M. E. S.

Lump on Belly.

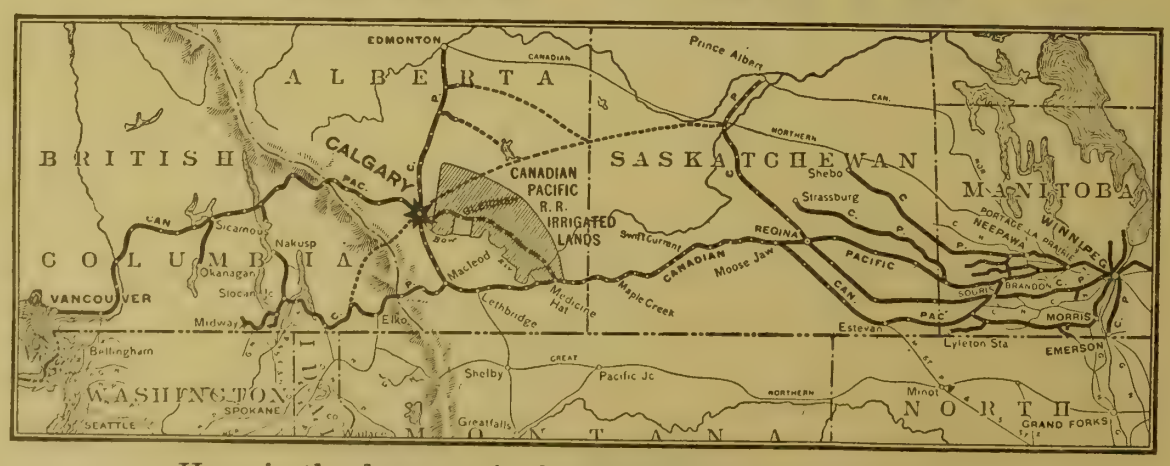
We have a cow with a lump on her belly between the udder and nave the size of a soup bowl and is hard We have bathed it with warm water rubbed it with turpentine and olive oil and poulticed it.

We opened it a month ago. It started 3 months ago and water run a first, but now has stopped and is still hard.

Cow is alone in the barn at night and in the yard daytimes.—R. H. R., Elsinore.

If the opening has not closed up, I should go to the druggist and get peroxide of hydrogen, he will give you the proper strength. I would inject it with this to start healing from the base. It if is closed up I should simply let it alone for nature to absorb in time.—M. E. S.

SOME FACTS



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For some more facts address **W. R. GILSON, 121 E. Fourth St., Los Angeles**

THE GUERNSEY IN POPULAR FAVOR.

There is no better index of the growth of the Guernsey interests than the increase of the Register. Great as this increase appears for an extended period the records of 1906 show more entries and a larger number of transfers than in any preceeding year.

Volume 17 of the Herd Register begins with this January number. When the quarterly issues of the Register were started with Vol. 6 in January 1905, the Club had been in existence seventeen years and there had been published 3572 bulls and 7080 cows. During the last twelve years there have been published 7612 bulls and 13,778 cows, or twice as many entries. This makes with the beginning of this volume 11,185 bulls, 20,859 cows in the Register, or a total of 32,044 animals.

There were 2706 sales recorded in 1906, or 400 more than in any previous year, and against 652 twelve years ago.

DAIRYING ON HIGH-PRICED LAND.

Economy of production is the motto of the exponent of dairying on high-priced land; or, in other words, the economy of high-priced land means the ability of the owner to secure maximum crops therefrom. Successful dairying is a pursuit that is cumulative in its effects; that is, within certain limitations the longer dairying is practiced the greater means of production are provided. Herein lies the foundation for the statement, "the cow fattens the land." Under proper management she is certainly not a soil robber. A good cow generously fed will not only yield a handsome direct profit, but, if the by-product is properly conserved and applied to the land, three-fourths of the value of the food she consumes will be recovered in the form of plant-food. She is indeed a veritable gold mine.

It is a self-evident fact that to dairy successfully on high-priced land, it must be practiced in the most modern fashion. When we refer to high-priced land we mean land worth all the way from one hundred to two hundred dollars per acre. Ordinary methods of dairying will not suffice on such land. Common cows with indifferent care would be out of place here. Even the usual system of pasturing would scarcely be profitable. Soiling should take the place of the pasture, thus maintaining three or four times more cows to a given area. Conditions are highly favorable for soiling over a large portion of Oregon. There are few winters in which green feed can not be secured in the open field all winter, west of all Cascade Mountains. This means an unbroken supply of succulent feed throughout the year. To reach this, however, the dairyman must plan a rotation that is in harmony with his enviroment. In alfalfa-growing sections this is an easy matter, as this forage-plant, when properly established, can be relied upon for furnishing green succulent feed for at least five months without any thought of the dairyman as to seeding or cultivation.

To illustrate the possible production of cow feed from twelve acres, the following rotation and acreage are given: One acre of rye and vetch will yield ten tons of green feed and the land can be planted to corn after the spring crop is harvested and will yield five tons of forage. The two acres of alfalfa, when well established, will yield at least three cuttings, yielding in the aggregate forty tons of green feed. Two acres of fodder corn will yield twenty tons. Four acres of vetch and oat hay will yield sixteen tons. Two acres of kale will yield sixty tons, and one acre of barley will yield sixty bushels of barley and two tons of straw for bedding. This in the aggregate will give 135 tons of green feed, sixteen tons of hay, a ton and a half of barley, and two tons of straw. This is sufficient rough feed to supply fifteen cows for one year. By purchasing thirteen tons of mill feed, at a cost of $325, the whole amount of feed required for a herd of fifteen cows for one year will be supplied. A good cow should yield a gross return of $100 annually. Thus the ten acres can be made to return $1175 annually for labor and investment.

This result may not be reached for the first few years, but with a careful selection of the herd and a thorough conservation of the by-products of the farm, even better results may be obtained.

In dairying, as in any other vocation, the personal equation of the dairyman is an important factor. Every phase of the industry must be conducted upon modern business principles. There may be, and doubtless there is, a good field for the dual-purpose cow, but not on high-priced land. The special-purpose cow is the only cow that should grace the intensive dairy-farm.

Every detail of the industry must be mastered. A full measure of cleanliness and comfort should be provided for the cows, which means that the rigid stanchion should be regarded as a relic of barbarism. The barn need not be an expensive one, but it should have plenty of light and good ventilation. Under the soiling system the cows are in the barn a goodly share of their time, thus the sanitary conditions of the building should be good.

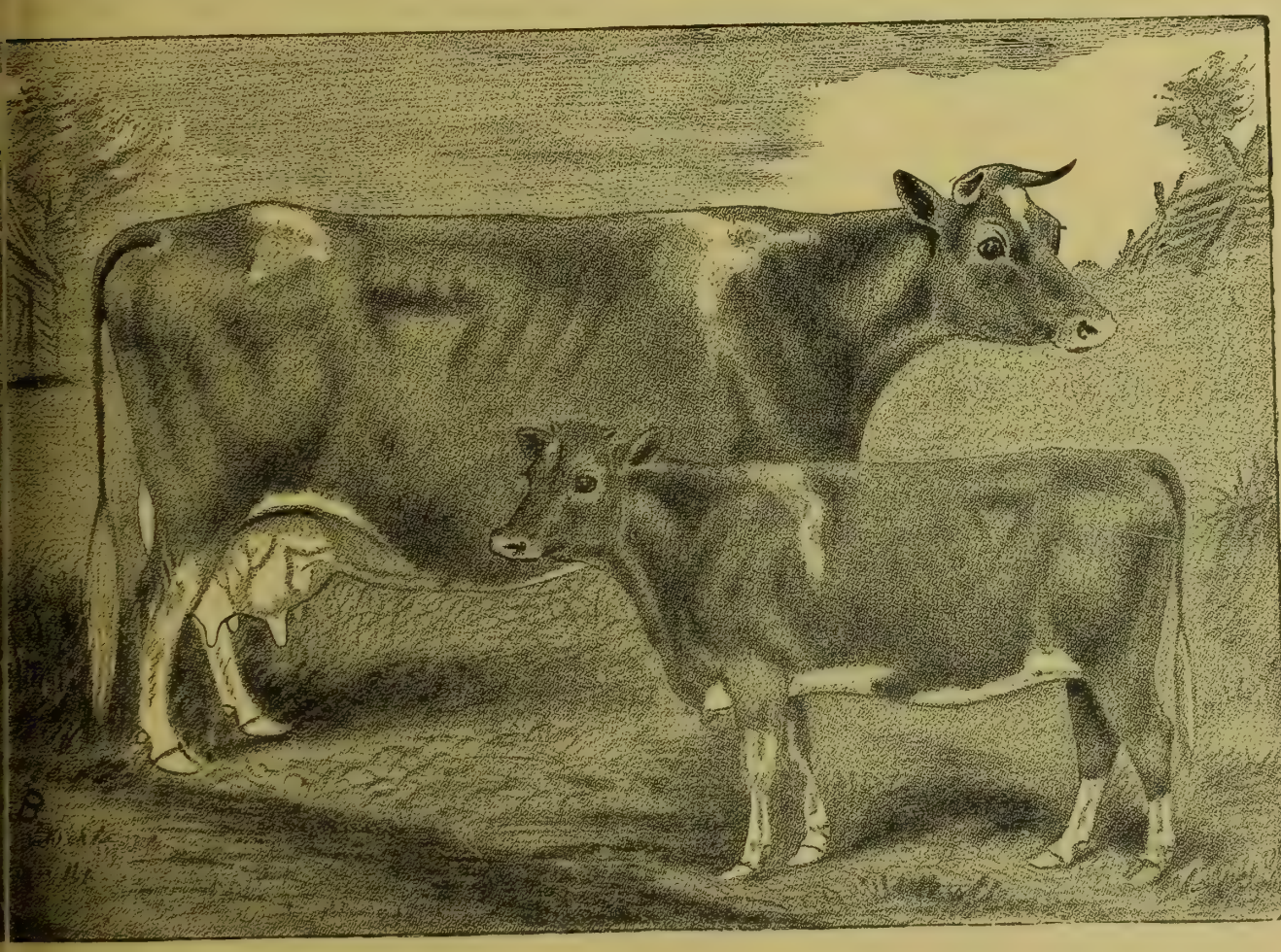
Kindness Produces Results.

There is no class of farming where kindness and punctuality will receive a greater reward than on the dairy-farm. The modern cow is an exceedingly complicated piece of animal mechanism. Hence for best results her guardian should by all means possess an amiable temperament. Harsh treatment will ruin any high-class herd.

It is generally conceded by observant dairyman that a cow which freshens in the fall will yield 25 per cent more profit than if she freshened in the spring. Thus from a financial point of view the bulk of the herd should freshen in the fall. Considerable depends also upon the management of the cow at the beginning of lactation. When the time for maternity approaches the cow should be placed in a clean box stall nights. After the ordeal is over the little calf should not be permitted to remain with its dam over six hours, twelve hours at the very outside limit. This is an important item in the management of the cow. It is the opinion of many up-to-date dairymen that every day a calf is allowed to remain with its dam, up to a certain limit, it decreases the annual value of the products of the cow $1. The cow should be fed very sparingly with concentrated feeds for several days. When she begins to regain her normal condition and the udder becomes soft and pliable, the ration of mill feed should be gradually increased until a full feed is reached.

There is no question but dairying can be made profitable on very high-priced land, but to reach maximum profits every detail of the industry must be carefully observed.

This active, pulsating, living piece of mechanism—the modern cow—is the emancipator of poverty and the harbinger of peace, prosperity and civilization; thus henceforth let us give the place of honor to this gem of the farm.—Address by Dr. James Withycombe at the meeting of Oregon Dairymen's Association.



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Mike—Pat, kin yez tell me what kapes them bricks together?

Pat—Sure, Mike; it's the mortar

"Not by a dom sight; that kapes them apart."

Teacher—Johnny, do you know the effects of alcohol on the cells of the brain?

Johnny—Naw, but I know de effects on de cells of de station house—

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By ERNEST BRAUNTON

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THE increasing warmth will start every dormant plant into action and spring, as far as vegetable growth is concerned, comes with a rush in California, and now is the time when you must hustle with your gardening.

Clean Up.

Get rid of all rubbish, dead weeds, etc., so that when the spring crop of garden pests hatch, they will find less shelter. It is also true that such a cleaning up removes many insects in a dormant state, their eggs, and often both "bird and egg."

Save Moisture.

As there is always considerable doubt about the rain supply, see that the soil about your plants is so disposed as to catch the needed amount in case it should fall. After each rain, and before the ground is too dry, hoe, and if possible rake all your cultivated ground, to retain the moisture as long as possible.

Prune Roses.

Roses may be pruned and manure spaded in any time during the month. In March they will begin to sprout for the spring crop. Do not prune such climbers at the present time as Double and Single Cherokee, the Banksias, Beauty of Glazenwood, Gold of Ophir, etc., as their bloom is produced all along the branches. The best time to prune these is after their spring crop, when they will have time during the summer to grow long branches for bloom the next season.

Fertilize Lawns.

Fertilizing of lawns may be done this month, as we seldom get weather cold enough after the latter part of February to check it, although March is equally as good.

While natural manures are best for cultivated ground, we cannot advise [illegible] too rank unless you now have a lawn so [illegible] can harm it. Unless natural manures have been thoroughly and repeatedly turned over and mixed each time of wetting, you cannot be sure that it does not contain some live seeds of pernicious weeds, Bermuda grass, etc.

DO THIS NOW.

This is the best time of the year for general garden planting; plant out citrus trees, loquats and all fruit and ornamental trees and plants from semi-tropic or tropic climates; manure lawns, and plant out gladioli; fertilize and cultivate roses and prune out useless wood.

PLANT SCREENS.

Many annual plants make effective screens and covers for unsightly places. Wild cucumber (or echinocystis,) cobea, and sweet peas may be used to decorate the tennis screen or the chicken-yard fence. The alley fence, the smoke-house, the children's playhouse, may be screened with morning-glories, flowering beans, and other twiners and climbers. The windows may be screened and decorated by vines grown either in the ground or in the window-boxes.

Efficient screens can be made of many strong-growing and large-leaved plants, of which castor beans, sunflowers, cannas, tobacco and other nicotianas, striped or Japanese corn are the chief.

GROWING CHRYSANTHEMUMS.

In growing 'mums, as in all other highly developed flowers, one should have an ideal, and in this connection it is as well to state that there are at least three types, somewhat different in effect, that are striven for by all 'mum growers.

Single Blooms.

If you want a few large flowers such as you see at the shows, you can have only one stem or three at most to a plant, and only one flower on a stem. Pinch off the young shoots as soon as they show themselves, so that the plant can never branch. If you are successful you will have the beauty of an individual object. It will be a wonderful thing and may not fit in with anything else, but will demand attention for itself alone. Remember that size alone is vulgar, and that the delicate and fanciful may be made gross and characterless by overfeeding.

A Few Blooms.

Do you wish enough size of flower so that you can recognize the variety and are you willing to sacrifice numbers? Then you would better aim to produce about four flowers to every plant or stem.

These branches should be as long as possible and therefore you should pinch out the central shoot of the young plant when it is five or six inches above the soil and make it branch. Teach it to cherish a high ideal—the ideal of four fine flowers, each at the top of a long branch.

A Fine Plant.

Would you like a handsome, symmetrical, bushy plant with twenty or more flowers? Do not try it, expecting great success with little care. The flowers will be small, sometimes partially developed, and so lacking in character that you can scarcely ever tell the variety. It also takes too much tying and training and disbudding, and the result is more or less artificial and has no artistic value for effect. Skilled gardeners can do it, but it costs more time than most people can give. The plants must be started early and fed with great care.

General Pointers.

Size and color form are the products of disbudding. Everybody has some color sense, but the conscious pleasures in form is a later development. However, it ought to be said that imperfectly blown flowers of chrysanthemums often have a beauty in mass effect. They are rarely painful, as is a partially blown dahlia. This is probably because the fully developed flower in one case is loose and free, while in the other it is often set and formal.

Whatever ideal is chosen, the best way to begin, in general, is to buy young plants of the grower. Young plants of any size from two to twelve inches in height can usually be had any time. New and desirable varieties are appearing so rapidly that the amateur may well trust to the grower for a selection of the best and most adaptable kinds.

"Why do the wild waves rage?" she cried;

"I do so long to know."

"Because you stepped," the wretch replied,

"Upon their undertow."

The Vegetable Garden

By ERNEST BRAUNTON

CONTROL OF APHIS.

NO INSECT is easier of control than the common "green fly" if it can be confined, but when it "roams at large" it is of course a serious problem and one that baffles the skill of the gardener.

The best method of dealing with these pests is to keep them off the plants. It is a poor gardener who is always looking for some easy means of killing insects. If the plants are carefully watched and every difficulty met at its beginning, there will be no occasion for worrying about aphis. A fumigation with tobacco smoke twice a week will keep them away, but if the fumigation is delayed until after the lice have curled up the leaves, the gardener will likely have a serious task in overcoming the pests, and the plants may be irreparably injured in the meantime.

In the greenhouse aphis never becomes a serious pest for a ten-year-old boy with a handful of straw and a few damp tobacco stems may with three light fumigations, for three successive nights get rid of all of the little insects. Of late years even this means of dealing with the problem has been simplified, for liquid tobacco preparations may be procured, poured into a vessel, a hot iron dropped in the liquor, and the smoke that arises will soon dispose of Mr. Aphis. In nearly a score of years of greenhouse experience, however, the writer never saw a serious case of damage by these insects in a glass house and one who knows it is indeed shiftless.

When these pests are in the open field they are very difficult to deal with for the common green fly will give birth to about fifty live young every twenty-four hours (during a small portion of the year only do they lay eggs,) and these will begin to breed when three days old, so that the increase seems to be almost incredible, thereby adding force to the old saying that "a stitch in time saves nine," when dealing with aphides.

Some persons, under the impression that these insects are leaf eaters, spray their plants with a solution of paris green or other poisonous ashes, while still others claim the insects do no harm because they do not eat the leaves. All the insects of this family are sap suckers and their mouth parts are not made for biting, but furnished with a long proboscis which is at once both a drill and a pump.

In the field they are combatted in two ways, either by spraying with kerosene emulsion or soap sprays, or by fumigation. With plants standing near of the ground either a liquid or dust spray is used, but with a low, rose rate plant like those of the melon family, the pests seem most easily annihilated by covering the individual plant with a cloth under which a small quantity of carbon bisulphide has been placed in a saucer. Neither this insect enemy has yet been found to effectively hold them in check

DO IT NOW.

Cabbage and cauliflower plants, and roots of asparagus, and horse-radish, may be planted at once; sow beans, peas, tomatoes and turnips; plant potatoes; plant onions, New Queen for early, Portugal for later, and Yellow Globe, Danvers and Australian Brown for main crop.

TRUCK GARDENING.

Before the introduction of commercial fertilizers, and the completion of railroads, the market gardening or trucking business could never have been developed. Forty years ago no one thought of growing vegetables for market away from the immediate vicinity of a large town, where a plentiful supply of stable manure could be always obtained.

Even after the use of artificial fertilizers had become common among farmers, and their use had developed the cultivation of some of the varieties of vegetables, such as peas and potatoes, on cheaper lands away from the immediate neighborhood of the large cities, the gardeners in those places could not be brought to believe that as good results could be had from the use of fertilizers as with stable manure.

And so until a very recent period the gardeners around the large cities thought that for their use stable manure was essential. But even these men have found out that the same results can be had more cheaply by the use of commercial fertilizers, in connection with a leguminous crop buried in the soil, to take the place of the organic matter in the stable manure.

Growing Onions for Seed in the Santa Clara Valley

LIME AND ITS USES.

Lime is one of the essential elements of plant food which must be in the soil to enable any plant to grow. But for all the purposes of plant food many of our arable soils contain an almost inexhaustable supply. But lime has been found to have a value in the soil apart from its use by the plant as food direct.

The chief of these uses, in a soil well stored with decomposing vegetable matter, is in promoting the growth of the nitric ferment organisms that change parts of this organic matter into nitrates, and thus makes the nitrogen or organic matter available as food for plants.

Lime also corrects injurious acidity in soils, aids in the breaking up of insoluble compounds of potash, thus rendering that base available to complete the work of the nitric ferments, and also has an important mechanical effect in the soil.

Wild hogs are reported near Red Bluff, and are being trapped and sold in the local market.

A NEW SWEET POTATO.

The California Experiment Station at Berkeley has come into possession of a new sweet potato, of which the following account is given:

Macomber's sweet potato is white-fleshed, and was obtained on Pagan Island, one of the Ladrone group, by Capt. J. A. Macomber, of Oakland. Capt. Macomber was struck with the delicate flavor of the tuber, and when leaving Pagan Island took a supply of tubers aboard his schooner for consumption on his voyage. He noticed that the tubers had splendid keeping qualities, and upon his arrival in California in November he kindly donated what tubers he had left to the experiment station of the university. The tubers when we received them, were in a remarkable state of preservation, notwithstanding the fact that they had been lifted in April, some eight months previous. If this characteristic persists with the tuber when grown under California conditions, it will indeed be, as Captain Macomber surmised, a big boon to the sweet potato growers and consumers of California. The tubers donated by Captain Macomber have been propagated and a limited number of tubers secured for distribution. The tubers yield many more cuttings than does the ordinary type, and quite a large number of plants can be secured from a single tuber if properly handled. It is a very prolific variety, with a tendency toward deep growth of large tubers. Trial is necessary to determine its cultural and market value.

The California station distributes this potato by arrangement with the United States Department of Agriculture at Washington.

ARTIFICIAL FERTILIZERS.

Mixtures almost innumerable are now offered by the manufacturers of commercial fertilizers, each claiming special qualities and advantages for different crops. Some go to the extent of offering a special brand for each different vegetable crop. This is largely unnecessary, though some variations of the different elements of plant food is desirable for different crops.

The potato crop, for instance, demands more potash than the cabbage crop, and less nitrogen, and the same rule will apply to most garden crops, according to their growth below or above the ground. The three elements of plant food which plants get by means of their roots, and which are most apt to be deficient in cultivated soils, are nitrogen, potassium and phosphorus.

Signal Hill Advance Dewberry Plants

Strong tip rooted plants
$1.50 per doz.
10.00 per 100
50.00 per 1000

Strong plants from this seasons cutting
.60 per doz.
$3.00 per 100
25.00 per 1000

SIGNAL HILL FLORAL CO.
349 South Los Angeles St. Los Angeles, Cal.

New Muskmelon

The new muskmelon pictured and described on the Cultivator cover of Jan. 10th is handled exclusively by

JOHNSON & MUSSER SEED CO.
113 N. Main St., Los Angeles, Cal.
50c per packet, $2 per ounce

Strawberry Plants
TROPICO BEAUTY
BRANDYWINE
$2.00 per 1,000, f. o. b.
Lots of 20,000 or more, $1.75 per 1000, f. o. b.
Lots of 100,000 or more, $1.50 per 1,000, f. o. b.
For Sale by the Grower,
D. Griswold Tropico, Cal.

SEED
OF THE BEST QUALITY PLANTS AND BULBS
THE NEW SEED STORE
Everything Fresh and of highest Quality.
SEND FOR CATALOGUE
Morris & Snow
555 SOUTH MAIN ST.
Los Angeles, California.

Crimson Winter Rhubarb
Original Burbank Strain
$1.50 per Doz., $6.00 per 100, $40 per 1000
Now is good time to plant. We are the only Rhubarb Specialists on the Coast. We devote most of our time to its cultivation and improvement. We have the Best pedigreed plants ever offered of this wonderful money maker. Write or call on
J. B. WAGNER, the Rhubarb Specialist, Pasadena, Cal.
A Fine Stock of Superlative Raspberry, also Fruit Trees and Vines of All Sorts. Both Phones.
P. S.—See Article in Cultivator on Page 566, issue of December 6th.

SEEDS
If you are in need of fresh and reliable seeds, of VEGETABLE, FLOWER or FIELD, and PLANTS on which you can depend, it will be to your advantage to send for our New Catalogue. Mailed free on application. Sevin, Vincent & Co., 621 Sansome Street, San Francisco, Cal.
In ordering please refer to Adt. in Cultivator

Cuthbert Raspberry Plants
Strong Roots $1.00 per 100
$6.00 per 1000
A. E. NELSON, EL MONTE, CAL.

California Horticulturally

By JOHN ISAAC, Sacramento, California

THE SEARCH FOR PARASITES.

THERE is every probability that the work of searching for beneficial insects will be indorsed by the present legislature, and continued by the Commissioner of Horticulture. A bill has been introduced in both houses and has been very favorably received making an appropriation of $12,000 for this purpose. In its scope this measure is wider than the last law which confined the work to searching for beneficial insects. The new bill provides for the proper care and distribution of these insects when they have been found. The amount asked for for this work is a mere bagatelle compared with the sums given for other matters of vastly less benefit to the state, and any results at all will amply repay it to our taxpayers. It is good policy to keep a man in the field continuously searching for insect friends, and if once in ten years, even, he should find a thoroughly effective parasite of some destructive pest the cost would be compensated for many times over. Who can compute the value of the Vedalia cardinalis or the Scutellista cyanea? Beside these brilliant successes there have been many other minor beneficial insects introduced, the total value of whose labors are inestimable. We know of no more profitable expenditure of the public funds.

PERIODICITY OF INSECT PESTS.

Apple growers in the Pajaro valley are preparing to fight the Canker worm, the Tussock moth and the codling moth; the three worst insect pests with which their orchards are afflicted. The Tussock moth appeared in unaccountable numbers last year and became a serious pest for the first time in many years. This insect has the habit, which very many of our pest have, of appearing at long intervals and in different sections in great numbers and then of almost wholly disappearing again and not being seen for many years. In our Californian experience we have known several such visitations where the Tussock moth threatened to become a most serious pest only to quietly disappear again after giving the growers a good scare. This disappearance is due largely to the numerous parasites which prey upon this caterpillar, aided perhaps by unfavorable climatic conditions for propagation. The Tussock moth especially has many parasites which attack it, and it is quite probable that even after numerous visitations of the pest to the apple orchards of Pajaro Valley last year, they may almost entirely disappear this summer. It is also true of our California locust that they seldom appear in destructive swarms for two seasons in the same locality. When our native pests appear in destructive quantities in any one season their natural enemies seem to breed in increased ratio and overtake them, and it takes several years for them to increase in sufficient numbers to become serious again. There are also various climatic conditions which may be favorable or unfavorable for the increase of the pests.

Stranger—What are your terms?

Hotel Clerk—Rooms one dollar up.

Stranger—I'm a poet and I want—

Clerk—Oh, in that case our terms are one dollar down—

A PURE FOOD LAW.

A strong effort is being made to get a stringent pure food bill through the present session of the legislature, which will supplement the federal law. There is no class to which this measure should appeal more than to the farmer and fruit grower, for they are caught by adulteration in two ways; both in what they buy and what they sell. There is hardly an article used in the household or on the farm which does not suffer from the fraud of adulteration or substitution, for which the farmer has to pay, while in the market many of the articles produced on the farm are doctored so that the price of the genuine product is so lessened that it hardly pays to grow them. Olive oil may be instanced in this case. It is doubtful whether genuine olive oil can be produced, taking into account all the expenses of growing, picking, pressing, bottling and marketing, etc., for less than a dollar per quart bottle, yet stuff labeled "Genuine olive oil" can be bought for one-fourth this price. Wines have been doctored to the detriment of the grower; prunes are doctored and filled with water after they leave the producer's hands, and so without end, and it all tends to lowering the price of the grower's products and to make him poorer. Certainly every producer should favor a pure food law.

TOO MUCH RAIN.

It is an old saying that it never rains but it pours, and such has certainly been the case the present season. The ground is soaked to its nethermost depths and it will be some time before the farmers in the upper part of the state can get to work in the fields. There has been no time between storms for plowing and the season is passing rapidly with little grain sown and little farm work done. We often suffer from dry seasons and have short crops for lack of rain, but this year it looks as though we should suffer from the opposite cause and have no grain and little hay because we have had too much rain.

FEDERAL ENTOMOLOGICAL WORK.

Congress has increased the appropriation of the Bureau of Entomology in Washington in order, among other things, that it may study the work of the destructive thrips in California. This work will be welcomed by our fruit growers as the thrips has been increasing in its destructive work for some time threatens to do much damage in the future. This insect is exceedingly minute and does its worst work in the blossoms of the fruit trees which it attacks, destroying their fertility and so preventing the proper setting of the fruit. It has so far been found very difficult to combat it, and it is to be hoped that with the aid of Washington experts we may reach some effective modes of keeping the pest within limits. It is not improbable either that work along these lines, started by the federal authorities, will be continued in other lines and our fruit growers have the assistance of the best entomologists in the country, which means in the world.

It has been decided to adopt electricity as the motive power on the Denver & Rio Grande railroad, the electricity to be generated by mountain streams along the line.

CATALOGUE
FREE
SEND FOR IT

Our Illustrated Booklet shows why

IRON AGE

Implements are the best garden tools made and the biggest money makers. You need one.

Wholesale and Retail Wagons, Carriages and Implements
Newell Mathews Co. 200-202-204 No. Los Angeles St., Los Angeles, California
Carload of Above Just Received

A Wide-Awake and Up-To-Date Seed House

We are now publishing our 14th Annual Catalogue. It is artfully designed; the style is new and original. The Cover Pages portray the busy scene at the Los Angeles market during the early morning hours. Every vegetable is illustrated and is described in Spanish as well as in English. Send your name and address asking for the catalogue.

SIGNAL HILL DEWBERRY—We are headquarters for plants. Price, per doz., $1.50; per 100, $10.00; per 1000, $50.00; 250 at 1000 rates.

We are Southern California Agents for

The Glendale Incubator Co.

a hot water machine, constructed along lines that are a working demonstration of the true way to apply the fundamental theory of artificial hatching.

We are also agents for the

Improved Pacific Incubators

and Combination Brooders

Write as soon as you can get a postal card for our catalog, telling you why you can't afford to be without our INCUBATORS and BROODERS.

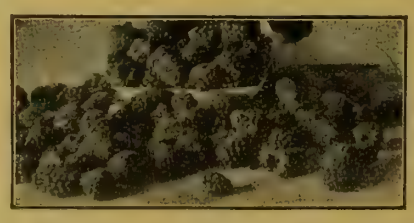
JOHNSON & MUSSER SEED CO. 113 NORTH MAIN ST., LOS ANGELES, CAL.

The Best Table Berry That Grows
The Himalaya Blackberry

Very hardy and will do well anywhere. Three plants will supply a family. Strong rooted plants. charges prepaid, 3 for 25c; 75c per dozen, $5.00 per hundred.

Bassett's Floral Gardens, Loomis, California

NEWBERT'S PHENOMENAL BERRIES



The most up-to-date berry on the market. The will clear you more money to the acre than any oth berry you can grow. $750 clear profit has been mac from one acre of these berries. The market pric has been from 75c to $1.50 per crate of 16 half-poun baskets. I have taken ripe berries from my vine by the first of May.

Young Plants—I have for sale this year plants tha I will guarantee will grow you large and health vines. **Prices**—I can furnish large orders on shor notice. Price per dozen $1.00, per hundred $7.50.

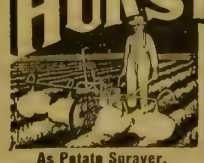
My plants are rooted from the tips, and will make yo a strong and fast-growing vine. Order at once t ensure delivery.

F. M. NEWBERT'S
Poultry and Berry Farm
Palmetto Av., Sacramento, Ca

To get actual size of the "Phenomenal" measure 2 inches lengthwise and 1 inch in width, then draw a circle around the points.

Don't Overlook Newbert's Winning Strain of S. C. Wh. Leghorn

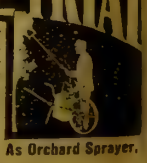
HURST POTATO & ORCHARD SPRAYER FREE TRIAL



As Potato Sprayer.

No money in advance—Pay when convenient. Sprays everything—Trees; Potatoes, etc. 4 rows at a time—20 acres a day. *Doubles your crop.* Even 2-acre growers say: "It pays for itself first season," as it has so many uses. A 16-year-old boy can operate it with ease. Brass Ball valves, Cylinder, etc *Guaranteed 5 years. Wholesale Price*—(where no agent.) AGENTS WANTED. After trial, if you keep it, we make terms to suit you Special Free Offer to first one in each locality. "SPRAYING GUIDE" and full information Free. We pay Freight. Write today.

H. L. HURST MFG. CO., 67 North St., Canton, O.



As Orchard Sprayer.

When writing advertisers, mention Cultivator.

HUMPHREY'S

Entire Flock of

Famous Prize Winning

White Plymouth Rocks

HAS BEEN SOLD TO

A. J. LITTLE

This in connection with my present large flock is conceded by breeders and judges as the

BEST FLOCK OF WHITE P. ROCKS

west of the Rocky mountains if not in the United States.

White Rock Cock TROJAN.

I am offering for immediate sale

100 Cocks and Cockerels

That will be sold at very
ATTRACTIVE PRICES

400 Hens and Pullets

Will sell singles, pairs, trios, or pens; will have birds mated for best results by expert breeders and judges of White Plymouth Rocks.

Eggs For Hatching

From birds that won as follows, at the 1907 Los Angeles show: 2nd, 3rd, 4th & 5th cocks; 1st, 2nd, 3rd, 4th & 5th hens; 1st, 2nd, 3rd, 4th & 5th cockerel; 2nd, 3rd, 4th & 5th pullet; 1st, 2nd, 3rd, 4th & 5th pens. Special for best 10 pullets in show, all varieties competing.

23 Out of a Possible 25 Prizes

Never in history have so many prize-winners been owned by breeder.

$2.50 for 15, $10.00 for 100

From special matings containing my very best prize-winners, $10 per 15. Correspondence carefully answered. Visitors welcome.

A. J. Little

Monrovia, Cal.

Get off at Mayflower, walk north two blocks, thence west two blocks to ranch.

Publishers' Department

THE FARMER AND THE ADVERTISER.

THE CAREFUL study of modern calalogues by the more intelligent among the farming population, is one of the remarkable indications of the time. It is only less remarkable than the careful and discriminative reading accorded to the advertising sections of the truly reliable and worthy farm journals. The profits which accrue to the growers and their families, and to the manufacturing and mercantile communities of the country, from this habit of weighing carefully the claims made by various advertisers, are almost beyond computation; and it points to the passing of the idea that all rural residents are "suckers," the easy victims of "gold brick" and "green goods" frauds, and so devoid of judgment and common sense that they separate themselves from their money upon the flimsiest of pretexts.

Another benefit to follow this development of independent judgment is the elimination, to a large and increasing extent, of objectionable and fraudulent advertisements. Likewise, the same influence is felt in the more careful preparation of advertisements and catalogues designed for the farmer's reading.

Many of these are veritable works of art, and there are not a few which rank as masterpieces of literary style.

THE CULTIVATOR "points with pride." There is not a single unbroken record left in the shop. More subscribers, more advertisers, more compliments, and fewer complaints than ever before. Also, more good reading matter—for we have been forced to add extra pages, a part ot the time at least, to make room for the unprecedented business. And there isn't an ounce of "boom" in it—just plain every-day sawing of wood into proper lengths for farm consumption. The compliments, too, come from all sources—from pleased subscribers and gratified advertisers.

The kicks—(we get 'em sometimes of course)—well, they just make us take a fresh grip on the old buck saw and plant our foot a little harder on the log. Talking about saws, that reminds us of the "old saw" that says something like this: "When we please you, tell others; when you have a kick coming, tell us." It's good advice; try it.

ANOTHER "point—(with pride.") That is the quality and character of our advertisers. Once in a long while we hear a complaint of unfair treatment of a subscriber by an advertiser, but very, very rarely. When a complaint is made it is investigated, and steps taken to prevent a recurrence.

Not all advertisements offered are accepted—be sure of that; but there is not a member of the Cultivator staff who thinks he is infallible, and mistakes do occur. But we are proud of our advertisers, and we believe in them; on the whole, they are representative people, and safe to do business with.

A Bunch of Beauties.

THE CULTIVATOR takes occasion from time to time to direct the attention of its readers specifically to some of the catalogues which are sent to its offices by various bidders for the ranchman's trade. We have before us at this time nine beautiful booklets of exceptional merit, from the International Harvester Company of America, Chicago. The value of these booklets lies in two things; first, the full and complete picturing of the machinery, in minute detail; second, the lucid and understandable descriptive text. Some of them also contain valuable tabulated statistics. The man or woman who will give thought to these books, can determine, without excessive labor, whether his purchases should lie in this direction. The subjects include cultivating machinery, harvesting machinery, dairy machinery, gasoline engines.

Some Hen Figures.

Anyone with a liking for statistics may get some glorious facts and figures out of Uncle Sam's annual report on farming operations. It gives a first-class idea of just what we are doing in the way of feeding ourselves—and the rest of the world. No one has a just conception of the immensity of American farm products until he reads such a report. Take the poultry industry—annual production about 45,000,000 crates, or 1,472,043,730 dozens, or 17,664,524,760 individual and separate eggs(worth approximately $130,000,000. These figures are amazing, yet in spite of this enormous production, it is still a fact that eggs are constantly advancing in price. The hen man needs to wake up to this fact if he aims at the highest possibilities in his business; for until this increasing demands is met and passed, prices are bound to rule higher. This being true, it is manifestly wise to take any and every course that will help production.

No better thing can possibly be done to increase laying than giving a healthy tonic in regular daily doses. All hens, and young chicks as well, need just this help in order to produce the most, or make the satisfactory growth. Nothing better for the purpose can be found than Dr. Hess Poultry Pan-a-ce-a. Thousands of successful poultrymen from all parts of the country testify to the wonderful value of this tonic. Dr. Hess(M. D., D. V. S.,) has for years studied every possible condition which may exist in poultry culture, and has given the world his Poultry Pan-a-ce-a as a result. For those who do not know about this tonic let me say, it does not force egg production by exciting or stimulating the fowl unnaturally. Instead, it makes digestion in the hen an easy and natural process, so that every grain or spoonful of mash eaten either makes eggs or flesh as Nature intended, and in the largest possible amount.

Those who use Dr. Hess Poultry Pan-a-ce-a tell us that it does positively cure and prevent disease. No flock can be sickly where it is used, because it makes the red blood which Nature requires for health. And also the necessary nitrates to carry off poisonous matter from the hen's system. By the use of this wonderful tonic, chicks are matured much earlier than would otherwise be the case; and pullets come into laying when eggs are highest and continue profitable the entire season. The cost of Poultry Pan-a-ce-a is a mere trifle compared with the great result it brings about. One cent's worth will feed 30 hens a day. Dr. Hess and Clark, of Ashland, Ohio, who prepare it, back Poultry Pan-a-ce-a with a written guarantee, so there is no risk in trying it. It is abundantly proved that if you use it as directed and occassionally sprinkle hens, roosts and nests with Instant Louse Killer, your flock will be free from disease and uniformly profitable.

Piles Cured In 6 To 14 Days.

PAZO OINTMENT is guaranteed to cure any case of Itching, Blind, Bleeding or Protruding Piles in 6 to 14 days or money refunded. 50 cents.

The Paying Hen

is the one which contributes 150 eggs or more in a year, toward the family grocery bill. The sure way to have such hens, eggs in abundance, and a lot of ready cash is to give a little of

DR. HESS
Poultry PAN-A-CE-A

with the morning feed **every day in the year.** Dr. Hess Poultry Pan-a-ce-a is a tonic, the sole purpose and action of which, is to assist nature in the performance of necessary functions. It aids digestion, prevents disease, and sends the proper proportion of each food element to the organ most in need. It also contains germicides which destroy bacteria, the usual cause of poultry disease. Poultry Pan-a-ce-a is the prescription of Dr. Hess (M. D., D.V.S.), and is a guaranteed egg-producer. Endorsed by leading poultry associations in United States and Canada. **Sold on a written guarantee, and costs but a penny a day for 30 fowls.**

1½ lb. package, 35c. 12 lbs. $1.75
5 lbs. 85c. 25-lb. pail, $3.50

Send 2 cents for Dr. Hess 48-page Poultry Book, free.

DR. HESS & CLARK, Ashland, Ohio.
Instant Louse Killer Kills Lice.
THE PETALUMA INCUBATOR CO., Petaluma, California, Pacific Coast Distributors.

The end of roof-troubles has come —Genasco Ready Roofing.

The cause of leaks is the weather—snow, rain, heat, cold, sun, wind. Shingles rot and warp; tin rusts; slate breaks and blows off; coal-tar roofings dry-out and crack.

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Send for the reasonable common-sense Book 00 which tells facts and reasons. Also samples free.

The most wide-awake dealers sell *Genasco Ready Roofing*. But send for the book anyway.

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GOOD ROADS LEGISLATION.

The article on the above topic, from the pen of James W. Abbott, for many years special good-roads agent of the United States Department of Agriculture, will be read with interest.

Aside from the fact of Mr. Abbott's experience along this line of work is his intimate knowledge of California conditions which appertain to building public highways. Seldom have we been able to obtain such valuable suggestions from so wide an experience. The suggestions offered for guidance of our present legislature will appeal to the public as eminently practical at this time.

The recommendation for a highway commission charged with the responsibility of state-wide action, is worthy of careful consideration. The suggestion for raising money by direct taxation on all property is in line with the operation of many eastern states now pushing the good roads movement.

Mr. Abbott, who is a mining engineer of large experience, would be a most excellent member of a state Highway Commission, having practical experience and technical education to render him a most valuable acquisition to such a body.

In line with Mr. Abbott on good roads building in California, is Mr. J. H. Reed, known to horticulturists as the "grand old man" of Riverside. In a recent letter to the Cultivator, he says:

"I feel confident there is a new era in good road building in Southern California, that will see wonderful results before it closes. You should feel no little satisfaction in having had so much to do individually and through your paper in getting the good work started. And let me serve notice just here. As soon as your good roads enthusiasts get your improved roads started, Mr. Braunton and several of the rest of us tree planting enthusiasts are going to follow you up with highway beautification and comfort, with the result that in a very few years Southern California will have a system of roads, for comfort, for speed, for beauty and real enjoyment, not equalled in the world, and the beauty of it all is, it will prove to be the best paying asset in a pecuniary way, this Southland will have."

WHERE APPROPRIATIONS COUNT.

In some of the states of the Union the legislatures are debating the proposition of expending large sums in the erection of capitol buildings. Notably this is true in Maine, where it is proposed to build a capitol edifice that shall be a monument to the enterprise of the residents of the Pine Tree State.

Naturally the question arises, whether more is to be gained in the way of advertising a state through expensive public buildings or by money expended in road making, experiment stations and other things which have for their object the advancement of the conditions of the rural population.

It is a mooted question whether grand capitol buildings have much influence in attracting residents, especially so if other important considerations which effect the prosperity of the farmer be neglected. In this age of practical agriculture the trend of effort is toward the bettering of farming conditions. Good roads have come to be regarded as a living necessity. Lands are desirable in proportion to their ability to produce and their proximity to active markets. Farms located on well-made highways are vastly more desirable than those hedged in by bad ones, and the seeker for a farm, nowadays, looks as much to the access of the market and the comfort of travel, as he does to proximity of rural schools.

Experiment stations are a vital necessity, not only in new states where conditions are undergoing radical changes, but in older states where worn out soil and pests as enemies of horticulture have practically rendered a new line of action imperative for the farmer.

In our judgment, money expended in extending relief to farmers, and in educating them to new and improved lines of work, as well as money expended on highway betterments, will be conducive to better results in advertising a state than in monuments of stone in buildings.

WHERE CALIFORNIA ATTRACTS.

The coming of Ex-Governor Horace Boies of Iowa, to California, with his colonization scheme, is only an index of the sentiment of the East on California immigration.

The fact that such a man as Governor Boies should become interested in our state, at his age, to the extent of purchasing thousands of acres of farm lands in one of the richest counties of our commonwealth, and placing upon them a hardy stock of Norwegians and Swedes, is the best possible proof of the value of California lands as they are viewed today by practical farmers of the East.

Mr. Boies owns several thousand acres of land in Iowa. He is very wealthy and an up-to-date farmer and stock raiser. He has determined, it is said, to purchase holdings in Tulare County and to become personally interested in the formation and operation of his colonization project.

He will bring with him several hundred people who will locate on his lands, as actual settlers, and proceed to farm them under approved conditions. We all know that Norwegians and Swedes are excellent farmers, good citizens and good people, and while they are socially somewhat "clanish," they stand for good schools, good roads and honest government.

The point, however, in this instance, is the turning of public attention to California, as a state where agriculture can be carried on with profit. It has only been a few years since the people in the East regarded our state as simply a place for the rich to locate, where the assets are climate and fruits only. It was tabooed as a poor man's country, the claim being made that it was a good state to spend money in but a poor one to make money.

Of late this notion has largely disappeared. The agricultural returns, as published in national and state reports, has demonstrated that more money can be made on 40 acres of California land, with vastly less labor, than can be made on 160 acres in the Middle West. Then the people have awakened to the fact also, that life is worth a good deal more under the balmy sun of California than in the ice-bound regions of the middle and western states All these conditions are producing their certain results, and they are turning the heads and hearts of thousands upon thousands of easterners to this land of oranges, lemons and cultured agriculturists.

STOCK IN MINING SCHEMES.

Not long since the Cultivator was besieged by a mining firm of Tonopah to run an advertisement in its columns, upon investigation it developed that the scheme was purely a stock gambling scheme and of course the advertisement was rejected, as all advs. of doubtful character are.

Our object in calling attention to this matter, at this time, is to warn our readers not to be inveigled into buying mining stocks on the flashy advertisements which appear in the newspapers. Nine times out of ten they are fakes pure and simple, and the person who invests in them loses his money. At present there is a widespread, almost insane stampede on the part of people anxious to get rich quick, to mining stocks; and the result will be, as it has always been, that millions of money will be lost in investments which are worthless.

The Farm, Stock and Home is advising its readers, just as the Cultivator does, to beware of their fake schemes of mining stocks.

In a late number it says:

"Observations extending ever many years fail to reveal a single instance where a scheme that was extensively advertised, with the view of making sales of stock in amounts of ten dollars up, ever resulted in anything but dead loss to investors. Opportunities to invest in legitimate business enterprises have been advertised and small investments solicited, that proved to be safe and remunerative to the extent of a reasonable or even liberal interest on the investment, but only in cases where careful investigation would prove the proposition to be legitimate, business-like and honestly conducted. Putting money in the hands of strangers whose alleged intention it is to invest it in a hole in the ground from which mineral, oil or some other natural wealth is to come forth in unlimited quantity; or in some mythical railroad scheme, a great invention or similar airy nothing, is sitting down to a gambling table where confederated thieves with stacked cards are pitted against one outsider, and what his chances are in such surroundings he should have no difficulty in understanding."

The farmer who thinks he has any surplus money to spend had better use it in improving his home place. He may be certain that every dollar he puts in, in the way of improvement, will add to the selling value of his farm. He has a sure thing in this method of acquiring wealth whereas in the mining deal he stands but one chance in a thousand to win back a dollar. He is simply played for a sucker.

The wet season will start the weeds along the highways. Improve every spare hour in cutting them down. Remember a tidy place, clean fence corners and good roads add five dollars an acre to the land.

The Cultivator appears again this week in 32 pages. We are necessitated to enlarge from time to time to let in our advertising patrons. The Cultivator gets returns for its advertisers. They say so, hence the demand for its space is increasing.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

Heber has a new cantaloupe association.

Alfalfa is ready for harvest in the Imperial Valley.

Many acres of asparagus are being planted in Imperial valley.

One shipper sends 300 boxes of rhubarb a week from Saticoy.

There are 127,400 acres of crops now in the ground at Imperial.

A carload of new machinery has arrived for the creamery at Imperial.

A thousand acres is to be planted in beans on the Santa Margarita ranch, San Diego county.

Coachella valley claims the first cabbages in the market. The crop is estimated at seventy-five cars.

Imperial valley receives $25,000 a month for the milk of 1000 cows. The Imperial Standard is authority for the claim.

The Ontario cannery is planning for the largest business of its history the coming season. It will add tomatoes to its pack.

A carload of shelled corn has been imported into Imperial valley presumably for seed. The crop will be used to fatten stock.

Many wells all along Base Line, of which there were formerly a great many, are flowing as the result of the unusual wet season.

A carload of poultry food in the form of small shells was shipped from Bolsa Beach last week, to the northern and central part of the State.

Brawley is promised a new packing-house and shipping shed to be erected for cantaloupes, grapes, watermelons, tomatoes, cucumbers and other products.

Apricots are blossoming and indications are good for an average crop, provided there are no heavy, dashing rains or strong winds while the crop is setting.—Redlands Citrograph.

Gold nuggets found in a Buff Cochin hen's crop in Los Angeles caused a flurry in the minds of the owners of rival breeds. There is good money in poultry without the nuggets, and less risk.

Reports from the celery field at Huntington Beach indicates a loss to date of 900 carloads, on account of the car shortage, with no relief in sight. If the situation continues unimproved for thirty days the loss will amount to over $200,000.

George L. Wagner reports a rise of thirty-four feet of water in his well on his potato plantation at Anaheim since the rains began falling the last of November. The well is only 140 feet deep. Mr. Wagner will plant 200 acres to potatoes this year.

The surveyors have reached the top of the mountain in making the preliminary survey for the wagon and automobile road over the mountain range from Glendora to the San Gabriel river just below the forks. The engineer reports not more than an 8 per cent. grade.

The Jesus Maria ranch has been incorporated. The ranch consists of 30,000 acres in the Lompoc valley. The oil rights are held by the Union Oil Company. The capital stock of the new company is $500,000. Los Angeles will be the principal place of business.

Within a month the farmers will begin cutting barley hay, that crop now booming ahead as never before. There should be eight and possibly nine full cuttings of alfalfa this year, and there is stock on hand to transform it into butter, beef and pork, for all of which bumper prices are being realized.—Imperial Standard.

Articles of incorporation were filed last Friday with county clerk of San Bernardino county for the Exchange Packing House company, the incorporators being James Barnhill, Earl F. Van Leuven, W. W. Wilcox, J. B. Hanna, L. C. Newcomer, Wade Purdum and T. E. Moon, all of Colton, and W. S. Bullis, of Los Angeles. Capital stock is placed at $10,000.

HORTICULTURE.

Redlands rainfall for the season is 15.53 inches.

Corona has shipped 193 cars of citrus fruit this season.

A landslide near the reservoir at Lompoc has crippled the water system there.

L. W. Coleman has sold his ten-acre lemon grove to a Pasadena investor for $11,000.

Fifty thousand grape cuttings from Riverside are to be planted in the Mesquite Lake region.

The Camperella bifuscati, the Chinese imported enemy of the red scale, is being tested at Riverside.

A Los Angeles man has patented a new can making machine, which completes the can in one operation.

The rainfall for February 16 at Highland was .92 of an inch, making a total for the season of 18.04 inches.

A break in the pipe of the Bear Valley line has deprived ranchers in that section of water. Repairs are being rushed.

The Monrovia-Duarte Fruit Exchange has declared a dividend of $1.35 per box for oranges on the December pool.

The crop of 200 acres on the Santa Ana river, to be planted in peaches, is reported as having been contracted for ten years at $25 per ton.

The Auburndale tract is to see tried the experiment of raising walnuts. About eighteen hundred trees are soon to be set out on the tract.

The wages of orange pickers at Highlands has been advanced by a large number of the growers from $2 to $2.25 per day.—Imperial Standard.

Sage honey will be scarce in the Riverside section this season. The bees are resorting in quantities to the almond trees now in bloom in Riverside.

The Tustin packing house is busy and keeps packing steadily. It is handling both the Mediterranean sweets and navel oranges, shipping nine or ten cars per week.

The San Joaquin Fruit Company, which has such large holdings and which is acquiring such a splendid water system, has just finished planting 500 acres to walnut trees at Santa Ana.

Frank A. Tetley and J. W. B. Merriman, are getting ready to plant sixty acres of grapes near Imperial, the greater part of which will be Malagas. About five acres will be planted to Black Cornichon.

Address your mail to Prado, if you mean Rincon, for that is the new name given to the postoffice and railway station at that point. Rincon has given place to a decidedly less picturesque sounding name—Corona Independent.

The largest vineyard planted in the Imperial Valley will be that of Stone Brothers and Pashgian, who are getting ready to put in about three hundred and fifty acres, mostly Malagas.

Several Riverside men are making preparations for planting a large acreage of grapes in the Imperial Valley.

Hemet valley ranchers are putting out fruit trees in great numbers. As orange trees are very scarce, not more than half the acreage that has been prepared will be planted. There is much talk among the ranchers of increasing the acreage of olive trees, as olives grown on the Hemet tract are free from scale, and the price has greatly advanced.

H. E. Bothin, a capitalist of San Francisco, has purchased Park Hill, a range of hills in the center of the Hemet Valley. A well-known landscape gardener, has laid out Park Hill in a series of driveways and boulevards on a most elaborate scale and has located two artificial lakes 350 feet higher than the town of Hemet. Ornamental shrubbery will be placed throughout the park. Mr. Bothin has plans for an Italian villa of fourteen rooms.

Northern California

AGRICULTURE.

Volunteer hay is appearing in quite respectable quantity above Clovis.

Farmers are rushing seeding at Pleyto.

Two power plants are busy constructing dams, flumes and ditches, at Springville.

Crops in the vicinity of Florin are growing nicely. The ground is too wet for planting.

Six thousand acres has been laid out in small blocks 25 miles north of Bakersfield.

C. B. Purvine of Petaluma, has received two thoroughbred heifers from Golden, Colorado.

A reinforced concrete bridge is in prospect over Putah Creek, Yolo and Solano counties, at Winters.

Hundreds of carloads of slate for roofing and tiling are shipped from Placerville to San Francisco.

More than 2,000 tons of grain have left the Soledad warehouse during the past sixty days, going north.

The Ocean Shore railroad has applied for a franchise for freight and passenger traffic through Watsonville.

Red Bluff. Sheep-men are receiving a better price for their sheep this season than they ever received before.

Poultry raising is coming to be quite an industry about Pleyto, and these parts are well adapted for that pursuit.

Prof. Loughridge of the University Agricultural college, has recently been investigating the soil around Porterville.

Springville has been nearly shut in from the outside world for the past six weeks owing to the bad condition of the roads.

King City has had 13.67 inches of rain for the season to date this year, as against 13.38 inches for the entire season last year.

A number of farmers in the Schellville district are constructing a telephone line to connect with the Sonoma rural system.

The Associated Poultry Keepers of Santa Cruz county, is one of the newest organizations for the promotion of the poultry industry.

The Hanford Sentinel says that a "vegetable condensing" factory is about to be opened at Armona, beginning with thirty tons of onions.

A corps of surveyors is at work on the Roca ranch, San Benito county, running lines for the immediate installation of an irrigation system

There is much activity in the dairy business in the vicinity of Corcoran and Angiola, and the new creamery at Corcoran is having a steady run.

At Lockwood it will be imposible for the farmers to get all their summer-fallowed land sown owing to the wetness of the land in that section.

Fifteen thousand sacks of potatoes are reported on hand in Pajaro Valley, at $1.75 to $2.00. The price in ordinary seasons is 95 cents to $1.10.

The Santa Cruz papers report the sale of the Patrick Morrissey ranch of 94 acres, located on the Soquel road, to syndicate for $50,000—$530 an acre.

Plowing for the sugar beet seeding is in progress at Chico. The ground is turned to a depth of 12 inches, and several thousand acres will be planted.

Dr. J. H. Haile of Winters, who owns the colt Delmer D. by Demonio 2:11¼, dam Babe by Dawnlight, believes he is the largest colt of his age in the state.

Ten head of cattle were killed by the County Veterinarian in Tulare county last week. Ten more were placed in quarantine. Texas tick is the cause.

The San Benito county seat is agog over the near arrival of a competing railroad—and the projected construction of a cement and pottery factory, near San Juan.

HORTICULTURE.

Orange picking is still progressing at Exeter.

Tulare county is organizing a fair association.

A fruit cannery is being talked of at Hanford.

Three loads of apples were marketed from North Tulle last week.

The rainfall for the season to Feb. 5, in San Lucas is 14.40 inches.

A large crop of volunteer grain hay is growing this season at Clovis.

Sowing grain and planting trees is the order of the day at Live Oak.

Lemoore claims 1987 acres of bearing orchards and 3225 acres in vines.

Foundations are being put in for the dairy building on the State farm at Davisville.

Many large tracts of land about Clovis are being surveyed into small holdings.

At present the prospects were never better for a large fruit crop around Woodland.

A carload of Jersey cattle was shipped last week from Pajaro valley to Dos Palos.

About a thousand acres are being set out in vineyards around Arbuckle and College City.

A peach cannery is promised for Sunnyvale, to employ 800 persons during the season.

One hundred acres near Madison are to be set to vines that will produce a wine grape.

The Philippine papaya will be tested in Tulare county from seed sent from the islands to Mr. J. N. Birkhead.

A mass meeting of fruit growers and packers is soon to be held in Watsonville to discuss methods of marketing.

The Angiola country is looking fine since the rains and there is considerable inquiry there by prospective land buyers.

One almond grower of Pennington is putting out thirteen acres more this spring, and about forty acres will also be put out by his neighbors.

One hundred and four cars of oranges from the Exchange packing-house at Sanger is the record for the season up to Feb. 11. The crop is unusually large.

The chief business about Centerville at present is picking and hauling oranges. On account of the bad weather very few of the oranges have been placed on the market.

From ninety Royal Anne cherry trees on his ranch near Vacaville, Mr. Chubb reports sale of cherries to the amount of $2200, or an average of $24.40 per tree.

Tehama county orchards this year have been greatly increased by the planting of young trees. Thousands of young trees have been shipped here from the nurseries and set out this spring. The Phillips cling seems to have been the favorite.

A farmer and orchardist near Hanford says that the old peach trees show the blight very much and he does not think spraying will save them. There are many orchards 13 to 15 years old, some that have been bearing for a dozen years.

The largest wine shipment from Santa Clara county in ten years has just left for New York City. It comprised 125,000 gallons of wines of the varieties of Zinfandel, Burgundy, Cabernet and Carignano. The consignment was sold for 16 1-2 cents a gallon, aggregating $33,125 and representing one season's product of 300 acres of vines.

Up to a recent date the total shipments of oranges from Butte county amount to 212 carloads—112 carloads shipped from Oroville and 100 from Palermo. These cars have brought an average of about $800 a car, the total value of the shipments made over the Southern Pacific to the present time being approximately $169,000. A number of carloads yet remain to be shipped.

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

Buy the World's Famous Egg Food No. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and brood. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for greatest batch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be isued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. FILCHER, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

Petaluma Incubator Co.

Main Offices and Factory, Petaluma, Cal., Box F.
Los Angeles, 505 South Main Street.
San Francisco Office and Salesroom, 33 Market St.

WHITE MINORCAS

Won at Alameda Poultry Association Show, 1907: 1st Cock, 1st Hen, 1st Pullet

EGGS FOR SALE—$2.50 per Setting of 15; Two Settings, $4.50; Incubator Lots $10 per 100.

A Few Cockerels For Sale. Prices on application to

Coulson Poultry and Stock Food Company
Petaluma, California

S. C. White Leghorn Eggs

For Hatching, from Captain Mitchell's Strain.
Large Birds. Prolific Layers. Large White Eggs.
Order Books Open for 1907 Season.

The Lincoln Avenue Poultry Yards

Carl C. Curtis, Owner, Pasadena, Cal.
Successor to Captain E. Pryce Mitchell

BARRED PLYMOUTH ROCKS

Ocean Blue Strain

We are booking orders for eggs from our famous prize winning strain, bred in line for 19 years, and never defeated in the show room. Our pullet pens are headed by the best sons of our 1st and 2nd prize pullets at the big 1906 show, unexcelled in shape, color, and head points, pullets laying at 4 months and 18 days. Cockerel pen headed by our 2nd Cockerel, 1906, a grand bird properly mated to ten females of same line; none better. Eggs, pullet pens, $3.00 and $5.00 per 15; eggs, cockerel pens, $5.00 straight; $20.00 per 100 from all pens. Stock must be seen to be appreciated.

Mr. and Mrs. D. T. Wieland, Moneta, Cal.

Take Redondo car, Second and Spring St., via Gardena, get off at Illinois St., right on the ranch.

Altadena Buff Orpingtons

N. HAYDEN & CO., BOX 1001, PASADENA

You can win with my stock and eggs because I have won and am winning. Matings this year very fine. Inspection invited. Write me your wants. **Eggs $2, $3 and $5 per 15.**

Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

SUCCESSFUL POULTRY INDUSTRY.

AT THE Farmers' Institute, last week, at Panama, near Bakersfield, Mr. W. E. Deacon, one of the successful poultry men of Bakersfield gave us some of his experiences in the egg business, which were so interesting that we print his paper almost in full, so that others may be encouraged to go and do likewise. Mr. D., in talking over the matter after the session, said that his 1500 hens netted him about $3000 a year, a comfortable income of $2.00 a head per year.

Mr. Decon's Egg Factory.

In discussing this question from the standpoint of practical experience, I am obliged to confine myself to one branch of it only, that of producing eggs for the market, and the marketing of the young roosters and the hens after they have passed their prime as machinery in the egg factory.

You will please pardon me for speaking of an egg farm as an egg factory, but after nine years of experience in this business, associated with my sons, and that with marked success for the past six years at least, this idea of a factory is ever present with me when I am thinking on the question of how to make the hens pay a large profit on the money invested in our business, and it is my opinion that the egg factories of this country will in the next ten years exert a greater influence in the framing of the pure food laws of the United States than any business in which the farmer is directly interested. You ask how this can be. I will tell you.

Egg Inspector Needed.

The people who are engaged in the industry of producing eggs for the market, the merchants who are handling our product, and the consumer as well, all realize that we have absolutely no protection on this the most important industry in this or any other highly civilized country. (I include now all branches of the poultry industry.)

Investigation and statistics will prove the truthfulness of my assertion. The Government has it's meat inspectors in every city of any considerable size, but who ever heard of an egg inspector? And yet it is just as important to have pure eggs as it is to have pure meats. Some may ask, "Are not all fresh eggs pure?". Not by any means. Just in proportion as the hens are properly cared for and fed good, pure food, or neglected and fed on all kinds of rubbish and filthy food, will you have fine flavored and pure eggs or bad flavored and impure eggs. If the chicken houses are not cleaned regularly and disinfected at frequent intervals, and the hens given the best of food, they can not remain in a healthy condition very long, and an unhealthy hen can no more lay pure eggs than a sickly cow can give pure milk. Now, is not this practical common sense? Certainly it is.

How the Farm Was Started.

Now I will return to the question as stated in beginning. Is an egg farm profitable in Kern county? My answer is, yes. And I also firmly believe that the more egg factories we can start in the county under a good management, with a county organization that would maintain an egg depot with cold storage facilities, the more profitable will be the industry in the county, and the more thrifty ranchers we shall have in this vicinity, and fewer sickly wives and daughters. This last declaration almost impels me to give away a little family secret. Yes, I will do it, with the understanding that none of my hearers will carry the news to Mrs. Deacon. It is this:

My wife bought a pen of fifteen hens and a cock of thoroughbred Brown Leghorns of Mrs. George Ware nine years ago, and from these the first season raised 175 as fine pullets as any one would wish to see, and from this small beginning has developed the Deacon Egg Farm. It came about in this way.

I came to Kern county from Indiana on account of my wife's health and also that of my own, and Mrs. Deacon bought those first hens from Mrs. Ware so she could have something to do in the open air and something to think about that would draw her mind from her poor health. Now, at the age of 53, she is enjoying better health than she has for thirty years, and we have our poultry business paying us a handsome profit on the investment. In this connection I will also relate to you something that is no secret in our family. My wife, by her good judgment in restoring her own health by the open air employment, has worked out the problem of what I have termed, "The Poultry Raising Cure for Nervous Prostration and the First Stages of Consumption," and it has in the past two years saved the life and restored to health our eldest daughter, who came from Indiana to us in the fall of 1904, a nervous wreck, and in the following spring broke down completely. After being treated by a good physician for three months, her mother took her to this same little place where she started our poultry ranch, and for one year gave our child the "Poultry Raising Treatment." Today she is well and hearty, when eighteen months ago she did not have one chance in a hundred to live three months, and I assure you this is no fairy tale either.

Good Blood Necessary.

The secret of success in egg production is first to have pure blooded stock (we believe the Leghorn is the bird.) Secondly, to give the flock the best of care, and, thirdly, to feed them a properly balanced ration.

The only way to produce a flock of good layers is to begin with good stock, and then select from your entire flock the very best layers, and place them in pens for the breeding stock. Do the hatching entirely from the eggs thus obtained, being careful to sort out all imperfect, or ill-shaped eggs. Place none but perfect eggs in the incubater or under the hens. Then you can rest assured the young chicks will come out strong and vigorous, when with good care and proper feeding the pullets will mature early and make the fall layers, when eggs bring the highest market price. In the care of a flock of laying hens, to obtain the best results, it is very essential that the chicken houses should be cleaned at least once a week, and after cleaning sprinkle the floors (dirt floors preferred, with air-slacked lime. Spray the inner walls with distillate once a quarter, at the same time paint the roosts with a mixture of Kern county

crude oil and the distillate to keep the houses free from vermin.

When the flock has been properly bred and well cared for, then the all-important test comes to know how to feed so as to produce the eggs at all times of the year, except during moulting season which should be in July and August in this climate, and have the hens ready for laying by September when the highest prices obtain.

Method of Feeding.

Our method of feeding and that which has always given us the best results, is known in poultry journals and papers as the balanced ration. It consists of a mash to be fed each day early in the morning, composed of bran, middlings, cornmeal, oil-cake meal, meat meal, and bone meal in exact proportions by weight, all mixed together thoroughly while dry. Then add enough water by weight also, and mix well again, and have this mixture so it will not crumble too much. By this method you know exactly how many pounds of the mixture we have to distribute to the flock, allowing usually about one ounce to the hen. This constitutes the forenoon meal for the entire flock of layers. The hens should be given enough of this mixture to last them until 1 o'clock in the afternoon. For the evening meal each hen is allowed about one ounce of Egyptian corn in the fall and winter seasons, and a like amount of wheat instead during the summer, with an abundance of fresh water, and free access to good Eastern ground oyster shell, grit and granulated charcoal, with free range on the green alfalfa at all times.

Future of the Industry.

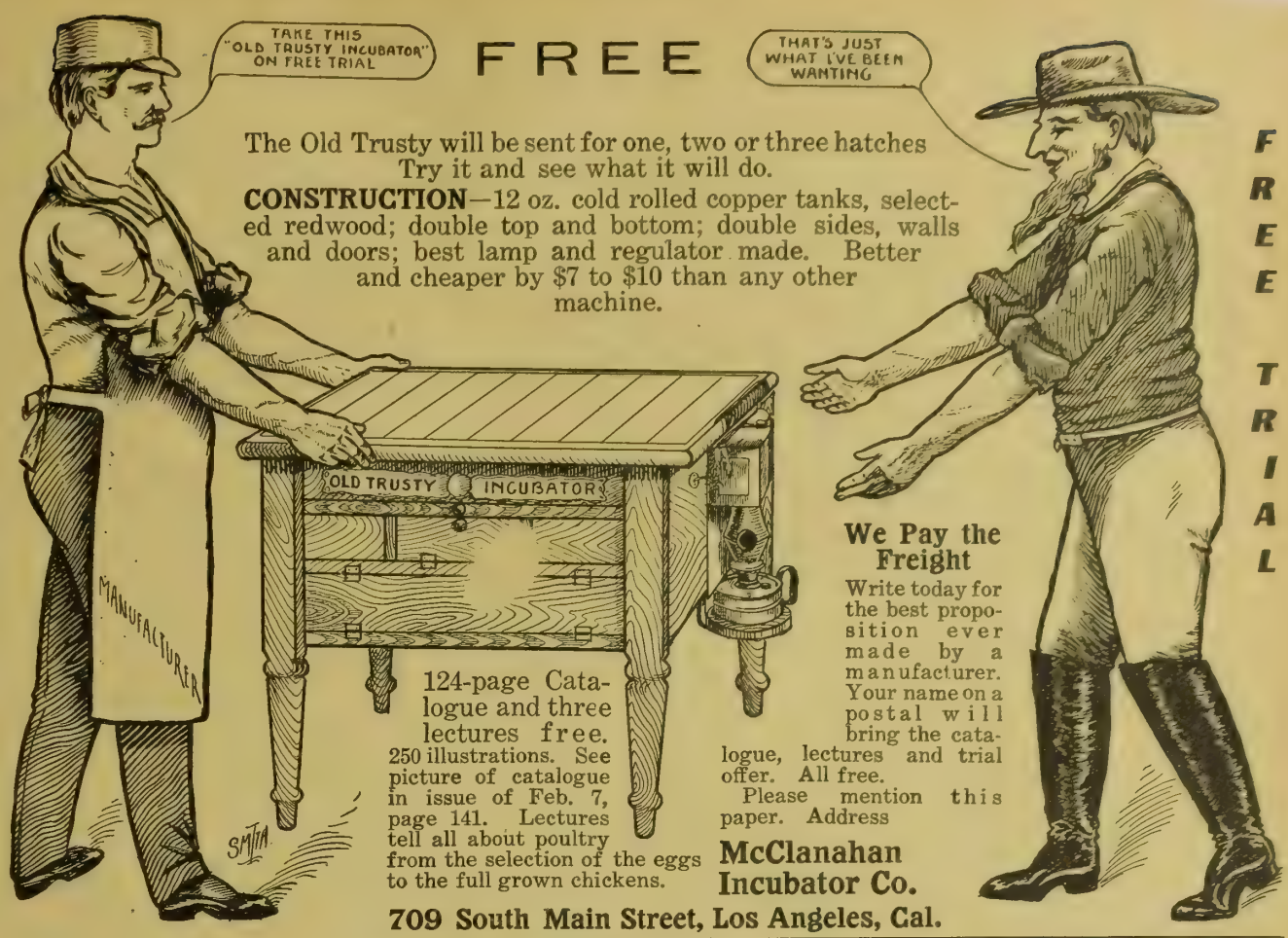
Now a flock of, say 150 hens, bred, cared for and fed in the manner I have described will approximately earn $65.00 per week from eggs alone for ten months in the year, with an additional income of from $300.00 to $600.00 annually from the sale of young roosters, and hens that have passed their day of usefulness as layers. This is calculated on the basis of our home market, as it has existed for the past six years. But permit me to say that just as soon as the Kern county poultry men wake up to the needs of our home market and realize the fact that in a very few years, the City of Los Angeles alone is sure to have a million of people to feed, then we can easily increase our net profits on poultry to the extent of thirty per cent. or more, and every farmer's wife and daughter who will engage in this industry can have a good bank account.

I have been watching the rapid development of the poultry industry in California, for several years, and I am sure we enjoy many natural advantages in this vicinity for the production of a first-class quality of eggs and poultry for the market. Many other sections of our State lack the good alfalfa ranges which furnish green food at all seasons of the year for our poultry, and here we have but little rain, much rain is always hard on the poultry business, especially when fresh eggs are scarce. The best grade of eggs bring from 50 cents to 75 cents a dozen in the fall in the large cities of the Pacific Coast. I candidly believe from my experience that no industry will at all times so surely yield a large per cent. of profit for the capital invested as the poultry industry in Kern county. I will make the prediction that within the period of five years our own people in Bakersfield and Kern City will call for the best quality of eggs and poultry, will accept nothing less, and the farms of Kern county will furnish the product. And our own merchants will, instead of being compelled to ship in thousands of dollars worth of eggs every year to supply the home market, be able to supply our near-by large cities with immense quantities of the best quality of eggs and poultry.

No mater what kind of food may be selected there is no combination suitable for all purposes. First, determine what you intend to do and then feed accordingly. One should not feed as much protein to non-producers as to layers, as the production of the egg demands that the hen should have food rich in protein. The setting hens, males and hens that show no inclination to begin laying do not require as much protein nor as much food as the layers. It may also be added that the growing chick must be supplied with foods rich in lime (such as bone,) as wel as with a suffiiciency of protein, as growth is evidense that it is producing flesh and bone. pullets also require more protein than the matured hen, and there arrives a period when the matured birds will not demand as much food as when younger.

GOLF.

A stick and a ball and a wee, small boy,
A whack, and the ball is off;
A walk a mile; then do it again,
And that is the game of golf.



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CONSTRUCTION—12 oz. cold rolled copper tanks, selected redwood; double top and bottom; double sides, walls and doors; best lamp and regulator made. Better and cheaper by $7 to $10 than any other machine.

FREE TRIAL

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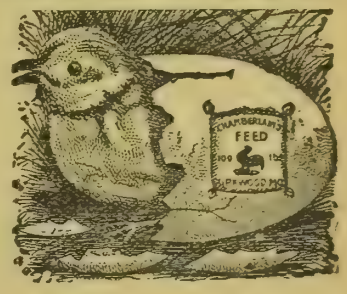

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Barred Plymouth Rocks

Won at Los Angeles Show, the largest ever held on the Coast, 225 Barred Rocks in class, as follows: 1st, 2nd and 5th Pens; 1st, 3rd, 4th and 5th Hens; 1st, 2nd 3rd and 4th Pullets; 2nd Cockerel. Barred Rock Club Cup for Best Display; Association Cup for Best Display, and Three Incubators, one for Best Pen in Show, all breeds competing.

Choice Stock for sale from same mating that I bred my prize winners from. Prices reasonable. Eggs, ***$3*** and ***$5 per 15.***

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Brown and White Leghorn
Barred Rock
Blue Andalusian and
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At $2.50, $3.50 and $5.00 each. Females at $1.50, $2.50 and $3.50 each. Special prices in quantities. Make known your wants. I breed only full blood stock. Eggs at $1.00 to $3.00 per setting. Incubotor lots at $5.00 per 100 and up.

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Special Attention to Shipments.

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We Trap-Nest Our Hens. Bird Laying Qualities are inherited. Why set from poor layers? We use pedigreed cockerels whose mothers have for over six generations laid over 200 eggs per year. Eggs from old hens, $1.50 and $2.00 per setting of fifteen; from pullets $1.00 per setting of 15.

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Chicks Just Hatched

We ship them everywhere. Pure Bred White Leghorn Chicks from the Best Egg Producers in the United States

CALIFORNIA INCUBATOR CO., MAXWELL, MAY 27, 1906.

Gentlemen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come so far and being so long on the way without the loss of a single one, but it is an undisputed fact that such was the case. We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. CAMPBELL.

CALIFORNIA INCUBATOR CO., 907 Washington St., Petaluma, Cal.

GROWING OF YOUNG CHICKS.

What to do with and how to manage chicks from a month old up, is oftentimes more of a problem than how to feed and care for them at first. In fact, brooders and prepared poultry foods have made it comparatively easy to bring chicks to what is known as the "weaning" stage, but after this there comes a time when a change of food and quarters must be made, and it is at this time that many poultry raisers suffer serious loss. As a rule unless the brooder is crowded or needed for a younger brood, chicks may be allowed to continue to occupy it nights until five or six weeks old. A longer time, however is not advisable, and more roomy and open quarters should be provided at this stage, or if weather is warm perhaps a little earlier. Unsually I transfer my chicks to summer quarters when about five weeks old, although I have occasionally done so from one to two weeks earlier with equally good success.

It is the poorest kind of policy to allow growing chicks to hunt up a change of quarters for themselves This they will do if neglected too long, taking up their nightly abode in shrubbery, trees, and machinery sheds about the premises. Chickens out of place are an intolerable nuisance, nor are there any animals on the farm harder to reform in this respect than these. In this vicinity there are tobacco curing sheds on almost every farm, and for some reason poultry seem to prefer them to any other place and are a nuisance, for they always will appropriate them to their nightly use. After the tobacco is put in, chickens are a damage there and yet, although one year's flock may be gathered up and sold at a sacrifice to get it out of the way another is often allowed to take its place the next. Such trouble and annoyance as may be made in this way might easily be saved by moving chicks at the proper time to some more suitable building.

By this I do not exactly mean that one should move them directly to permanent quarters, although if not filled up with old stock this may be done. In case the old flock has been broken up and scattered about in breeding pens and other summer quarters the young flock may advantageously take its place at once, but where the houses are already full, it is only inviting disastrous loss to crowd the young in with the old. In this case it is much better to provide small colony houses to be occupied until the old flock can be disposed of, or until the approach of cold weather makes it necessary to transfer again to warmer buildings. This is really the very best way of all where the little summer houses are available, but ordinarily, they are not on the farm and some other means of housing chicks during the developing period must be provided.

Scratching Pens.

A good plan and one I have always found satisfactory is to move them from the brooders to the scratching rooms attached to the main buildings. These are roomy and can be closed entirely or in part, making it easy to confine them for a few days after transferring, until they become accustomed to their new home, and later allowing them to pass in and out through openings too small to permit the grown birds to enter. Grain is thrown on the floors in clean litter and the young can scratch and eat at will without being robbed or disturbed by the old. This enables one to feed generously and keep up a steady growth, thus bringing the young stock to maturity at the earliest possible time. Midsummer losses, inevitable where young and old are housed and fed together, are avoided and the young stock does not annoy the farm owner by roosting in buildings where they are not wanted.

In these scratching rooms, of course, are no permanent roosts. For the accommodation of the young chicks, very low perches are temporarily put in These are broad enough so that they can sit comfortably on them and about six inches above the floor. A 2x4 studding timber makes an excellent perch and for a number of weeks, one perch twelve feet long will easily accomodate all the chicks taken from any one brooder. In time however another will be needed and the first should be also raised a little.

In connection with roosts it might be well to say that a regular spraying with kerosene oil is very essential in order to keep down mites and other vermin. If the roosts and droppings under them are thoroughly soaked with oil occasionally mites will not trouble and really there is nothing so detrimental to rapid development as these pests when once they become numerous enough to be troublesome. It is almost impossible for a chick to eat enough to more than support its body and the mites without anything to promote growth. Mites must be kept down if vigor is to be kept up.

Food for growing chicks should consist largely of mixed whole grains. Wheat and oats together with some corn and buckwheat should be scattered in litter and at this stage chicks should be given all they will eat. Grit and clean water are also essential and should not be overlooked. Coarse shorts wet with milk is excellent for an occasional change and in fact may be fed freely to good advantage. With roomy quarters, freedom from mites, and plenty of food chicks should develop very rapidly, enabling the owner to dispose of the culls and cockerels while the price is yet good and to put the pullets into the best of possible shape for winter egg production.

MRS. MINNIE HONAKER.

One of the main causes of failure with poultry raisers is the lack of cleanliness in the hen house. Dirt breeds insects. Clean the hen house daily in winter and empty ashes on the floors. Grit in winter is indispensable. Vegetables, meat, oats, wheat and bran should be fed alternately Give boiled potatoes for one meal a day. Plan for the comfort of the egg producers and use them so well that they just can't help laying. Keep only active hens. Did you ever stop to think what a wonderful piece of mechanism a hen is? What a tremendous strain there is on that frail looking thing we call a hen! Shouldn't we give them the best care and attention? And if we do this how grateful they are and how hard they try to tell us of it.

NATURAL CAUSE.

A scientist, in the employ of the government at Washington, recently met his physician in the street.

"I don't know what's the matter with me, Doctor," said the man of science. "I am limping badly today. Do you think it's locomotor ataxia?"

"Scarcely that," replied the physician. "You are walking with one foot on the curb and the other in the gutter."

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INDIAN RUNNER DUCKS

Eggs, $1.50 per setting, $6.00 per hundred
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They are vigorous and healthy and great producers of large white eggs. They have good size, rich yellow legs and bills. Eggs from special mated pens, $1 per 15, $5 per 100
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BARRED ROCKS
EXCLUSIVELY
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EGGS From all the standard varieties. We can fill orders in any quantity on short notice. We handle only thoroughbred stock. **75% Fertility Guaranteed.**
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Little Chicks In any quantity. Let us book your wants. Send for Price List.
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200-250 Egg Fowls | **WHITE WYANDOTTES** | Eggs Ready Now
Capitol Strain
Read the testimonials in our ***new*** catalogue; they will tell you more than we can.
Egg Records, Show Records, up to date, 1907
CAPITOL AVENUE POULTRY FARM
A. L. R. MANTZ *Rural 21, Box 98k* *SAN JOSE, CAL.*

Black Minorcas Exclusively
Winnings at the great Los Angeles Show, January 1 to 5, 1907:
Cocks—1st and 3rd. ***Cockerels***—1st, 2nd and 3rd
Hens—1st, 2nd, 3rd, 4th and 5th.
Pullets—1st, 2nd, 3rd, 4th and 5th. ***Pens***—1st and 2nd.
Cup for Best Minorca Male, also Cup for Best Display.
Plenty of Fertile Eggs For Sale.
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Prize Winning, Large Egg Laying Strain. Won Nineteen Prizes in 1906!
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Mrs. C. D. Hubbard Box 282 San Fernando, Cal.

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Already the talk of the poultry world, 102 pages filled to the brim with valuable information drawn from actual experience.
"Sure Hatch" Incubators
Sold under five years guarantee, freight prepaid, for the low sure-hatch prices. Must do the work for you or we take it back at our expense. 110,000 in use, giving satisfaction. Write today for the new free Sure-Hatch Book No. 25. Read it before you buy an incubator at any time. ANNA P. WILLIAMS, Gen. Agt., 809 South Main St., Los Angeles, Cal.
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Black Tailed Japanese Bantams
I have purchased of Le Roy Burnell his entire flock of these miniature beauties, including all the prize winners at the late Los Angeles Poultry Show. These, added to my original stock, give the following prize winners: 1st and 2nd Cocks; 1st and 2nd Cockerels; 1st, 2nd, 3rd and 4th Hens; 1st, 2nd, 3rd and 4th Pullets; and 1st and 2nd Pens, which makes the largest and best flock on the Coast. ***Eggs, $2.00, $3.00 and $4.00 per 15. A few trios for sale.***
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This is not a medicine but a high grade nitrogenous food. Write for free booklet, "How to make Hens Lay." Our Poultry Foods are sold by all local dealers and manufactured solely by
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1907 Winnings—
Cocks-1st, 2nd, 3rd and 4th. Cockerels-1st and 5th. Pullets-5th. Pens-3rd and 4th.
Yearling Cocks-1st, 2nd, 3rd and 4th. Pullet-3rd. Hens-1st and 2nd. Cockerel-2nd.
Eggs and Stock For Sale
No Adult Cocks or Pens Exhibited
L. D. HADLEY, Box 6, San Gabriel, Cal.

EFFECT OF LAYING COMPETITIONS.

In his report on the Australian laying competition, Mr. Thompson, who has charge of the competitions, says: "The egg-laying competitions have undoubtedly increased the production of eggs very much. Many people thought that the effects of booming egg-production would paralyze our egg market, and that eggs would become a drug on the market. The competitions have not done this, but they have shown poultry-breeders how to increase their egg-yield, and get a maximum return from a minimum expenditure of labor and feed. Early breeding has become general rather than exceptional, and the greatest increase has been in winter eggs. Good egg-producing strains are fast becoming disseminated throughout the whole State (New South Wales,) and the market remains as good as ever, with still $200,000 or $250,000 worth of our own State trade to capture.

"The egg-laying competitions have broken down the old methods and substituted the new. The old method, which is still continued on our general farms today; the new methods brought out by our laying competitions only as yet have been adopted by the specialist poultry-farmer. The general farmer allows his poultry to run promiscuously together, in number and sexes, and to roost anywhere and lay anywhere. The old method means losing money, from the fact that at times fowls are overfed and at times underfed. Both produce low returns and encourage disease, and the result from the ledger spells loss.

"The competitions have demonstrated that dividing hens up into small lots, providing them with good shelter from wind and rain, and with plenty of good seasonable feed, varied in character, with good breeds, early breeding, and breeding every year, this loss can be turned into large profits."

One might think Mr. Thompson was writing about conditions in this country. His word rings true even on this side of the earth. The conditions he describes would apply with us in many cases.—Poultry.

A POULTRY EXPERIENCE.

We live on a small farm of eight acres and raise Single Comb White Leghorns. My poultry account appears small after reading in the paper where one man gets an average of two and one-half eggs per day of a hen, for a whole month. I have been keeping an account of what my small flock has done for the past three or four years, what it cost, and what I got for my work. For one year, commencing December 2, 1905, from eight 1-year-old hens and one hundred pullets, April and May hatching, I received 13,316 eggs. I sold eggs to the amount of $149.41, at prices ranging from 10 to 25 cents per dozen. Four hens were set, which hatched fifty-three chicks and raised forty-five. These furnished us all the fried chicken we wanted, with twenty pullets left for another year as producers. I now have 170. I lost 36 hens during the last year from various causes.

During that time I fed 129 bushels of corn costing $46.10; 20 bushels buckwheat at $8.95; 51 bushels oats at $12.39 making a total of $67.40. In addition to these grains we fed 10 bushels of carrots and garden beets which cost us nothing but the labor to produce.

The hens have a range of six acres, of which two acres are in pasture and the other four are farmed. The net amount received above cost of feed is $81.97. This is not including the fowls and eggs used by the family.—Mrs. Huldah M. Malone, White County, Indiana, in Farmers' Guide.

CHILDREN LIKE POULTRY.

The poultry editor of the Cultivator, has a little grand daughter, four years old, who is developing into a practical chicken raiser. She seems naturally to take to poultry, and poultry to her. It is so with children in general.

Here a suggestion may be made with profit.

The farmer that doesn't have time to look after his poultry is losing money, because, if he only realized it, his hens are one of his greatest sources of revenue. If he doesn't have time personally to give his fowls the attention they require, he should turn the work over to his wife and children. Women generally enjoy taking care of poultry, but often their household duties are so numerous that they cannot do as much as they would like. Then, to use a slang expression, "it is up to" the children to do it. If the farmer will do the heavy work, it is safe to predict that his wife and children will see that the poultry gets all the care it requires. By giving a child a hen and telling her she can have all the profits she earns from the chicken, she not only becomes interested in the work of caring for poultry, but learns to save money. The sole care of the poultry should not be turned over to children, however, because they are prone to neglect unless they have an overseer.

POULTRY IN CHINA.

While the Chinese are perhaps the most successful poultry raisers in the world, says Consul-General Rodgers, at Shanghai, according to natural methods, they are also undoubtedly the most economical in the business. The foreigner, seeing the immense, number of ducks, chickens and geese of the country side, naturally assumes that large amounts of grain and other poultry food must be consumed. Yet, investigation reveals the fact that the Chinese consider the fowl perfectly able to pick up a living without much assistance on their part, and as a consequence herding is practiced, each flock being kept on the move, as sheep are on a range. It is true that at some periods of the year the fowls are fed, but the food given them would be considered chaff in other countries, and is practically worthless. The natural result of this is poor poultry, but that is the rule and standard in nearly all China. It is an absolute fact, moreover, that the gleaning of the paddy fields by the flocks of ducks, which often contain several hundred, is a distinct benefit to the Chinese farmer. As in all other methods of life, the poultry-raising process is another wonderful exhibition of the marvelous economy of the Chinese. Indeed, it may be said that the frugality of the Chinese in such industry, as compared with the prodigality of others, is an excellent illustration by which to measure the radical difference between the Chinese and all other races in the production of wealth. In view of these statements, China can not be considered a promising field for the exploitation of American poultry foods, unless there should come a great increase in the value of the product and a reversal of established custom, neither of which is likely to occur.

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4 out of the 5 Specials given by the American White Plymouth Rock Club.
Silver Cup for the ***best collection*** in American Class.
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I am able to ***furnish*** the ***best*** birds and eggs at moderate prices. I cannot furnish large lots for incubators.

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Must Hatch Incubators

Hatch all the fertile eggs and produce vigorous, healthy chicks—two factors that count in the poultry busiuess. We operate the most extensive manufacturing and poultry plant on the coast, and guarantee all our products. If you are in need of anything for the poultry business, write for our illustrated catalogue "B" We have the largest hatcheries in the world, and furnish the best S. C. White Leghorns it is possible to produce.

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The only breeders that won on White Rocks, Barred Rocks, White Wyandottes, Buff Leghorns and W. C. B. Polish. Showing that we have the best. Stock and Eggs for sale. Send for Circular.

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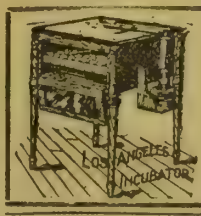

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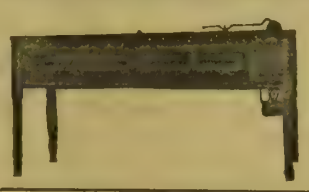

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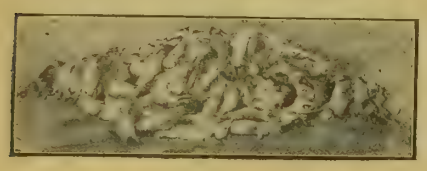
Now is the time to go for gophers with Bille's Gopher Poison. The gophers go for it and it will go for them good and plenty every time.



This is a photo of 201 killed in one day on a ten acre field before they could get back to their holes, with one bottle of

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Endorsed by Agricultural Colleges and Experiment Stations. Not one of the ordinary poisons, but in a class by itself. Has had greatest success in the Middle West. The secret being that it is most attractive to gophers, squirrels, etc., and sure death to them. It gives the grain a glossy coating, retaining the poison for weeks. Hundreds also die in their holes by eating it there. We have bought the patent rights for this section and are selling at the eastern price of $1.25 for large bottle. The ingredients cannot be bought at a drug store for that price. Money refunded if not as represented—so printed on the bottle. If your dealer does not keep it send $2.50 for two bottles, express prepaid by us. Anyway send for circular with affidavit of above killing, and a few out of many testimonials.

Compounded under Bille's patent by

West Coast Stock Food Co.

818 San Fernando St. Through to Alameda St. Los Angeles, Cal.

Manufacturers of the celebrated West Coast Poultry Foods.

Send us the names of twelve persons who keep poultry and we will send you free "The Poultry Manual," by those high authorities, F. L. Sewell and Ida E. Tilson, profusely illustrated.

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From Eggs Suit Us

From Brown Eggs, 4c
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White Minorca Cocks and Cockerels and White Wyandotte Cockerels For Sale.

Eggs of Both Varieties from High Scorers and Great Layers.

$1.50 per Setting, $8.00 per Hundred

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Pure Bred Stock

S. C. White Leghorns—Large eggs, great ayers. ***Eggs 75 and $1. per 15, $4. to $5. per 100*** according to matings. All hens weigh 3½ to 5 lbs. Satisfaction guaranteed.

J. F. GOETTING, El Casco, California

Willard Poultry Farm

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WHITE WYANDOTTES WHITE MINORCAS
INDIAN RUNNER DUCKS

Winners at late Los Angeles Shows. White Minorca and White Wyandotte eggs, 1st pen, $3; 2nd pen, $2 per 15. Duck eggs, $2 per 13.

Mrs. Hungerford, Mgr., Hynes, Cal.

Buff Wyandottes

2d Prize Cock For Sale A close 2d to my 1st cock. Sire of 1st and 4th cockerels at late Breeder's Show. Write for particulars. Stock and eggs on hand.

O. S. Hoffman,
San Jacinto, Cal.

White Rocks and Black Minorcas

They are beautiful birds; Rocks as white as snow, Minorcas black as a crow. Cocks from W. M. Humphrey's and Harry E. Rose's yards. Eggs for sale. Best pen, $1.50 per setting of 15, or $7.00 per hundred. Second best, $1.00 per setting of 15, or $5.00 per hundred.

Chas. S. Hunt, El Monte, Cal.

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WHITE, BUFF AND PARTRIDGE **Wyandottes**
Won 26 Ribbons and Special Prizes
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Take Redondo car via Gardena to Strawberry Park
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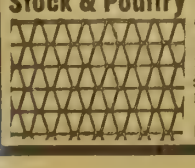

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

Cannibal Chicks.

I have a lot of incubator chicks that are nearly two weeks old, they were doing fine until they turned cannibal and picked the tails off of each other, they leave their feed to chase each other. I have to keep them in a darkened place, feed them well on chick feed, rolled oats, cracked corn and curd; do they need meat?

Please tell me what to do to stop their raids upon each other. I am afraid I will lose them all.—Subscriber, Dumbarton.

I am sorry to hear you have some cannibalistic chicks. Try to find the culprit that starts it or the few that are the ring leaders and isolate them.

The vice of cannabalism comes from their being idle, they get into mischief.

The only way to cure it is to give them meat, or beef scraps. Keep it always before them in a saucer or box, and make them scratch in alfalfa hay cut up in half-inch lengths, for their grain; give them as large a run as you can and supply them with growing green food such as a bed (or box) of lettuce, or growing wheat or barley, they will enjoy pulling these up by the roots.

Idle chicks are sure to get into mischief and brooder chicks must have occupations planned for them, as they have no mother to scratch for them and teach them.

This vice always comes from idleness and from a lack of green food and sometimes from a craving for animal food.—Mrs. A. B.

Orchard Fertilizers.

In the Cultivator of January 24th, on "Orchard Fertilizers." by J. W. Mills, Mr. Utter, conductor of Farmers' Institutes of Wisconsin is quoted as advising the use of simples as preferable to certain mixed fertilizers, and I would like to have further advice as to best time to use them on a lemon orchard, trees 12 years old.

In the fall of 1905 the orchard had a coat of stable manure. In the spring of 1906 a light application of bone meal and again in the fall just before seeding orchard to vetches.

Would it be best to apply some kind of fertilizer before or after plowing under the vetches? Advice as to the kind, quantity and best time of application will be greatly appreciated. —Subscriber, San Dimas.

We are sorry that we cannot give you any definite instruction as to quantity of fertilizer. About the best combination that we have had our attention called to, is an application of stable manure before the green crop is planted and the commercial fertilizer sown on top of the green crop just before plowing it under. A good many put in the bone fertilizer before sowing the seed. On most soils, legumes do better with stable manure to help them grow. It is usually cultivated in before sowing the peas or vetch seed. We have had good results by scattering it broadcast just after sowing the seed when it acts as a mulch and the rains wash it down when it also acts as a food for the green crop. On light soils the green crop will double over that without the stable manure.—J. W. M.

Grafting Peaches.

I have some one-year-old seedling peach trees, that I transplanted in January, which I would like to graft this spring. Which graft would you advise, the wedge or the splice?

Should the scion be of same size as the root, or if smaller, should it be set in center or to one side? When is best time to graft?

Would also like to know how many feet of the road is allowed for shade trees.—F. J. W., Kingsburg.

The wedge-shaped scion is the best in your case. Do not use a scion larger than a lead pencil. That is the best size. Make the inner barks match as nearly as you can and tilt the scion out at the top so that the change in position is scarcely perceptible. That will insure the matching of the bark in one place at least and that is enough to insure the flow of the sap from stock to scion. Wrap with waxed cloth and paint that over with wax. Clear bees-wax is the best when used under ground. Graft before the blossoms open.—J. W. M.

You will have to consult your supervisors about amount of road to be devoted to tree planting as we understand it, such things are regulated by the supervisors under state law in the country and by the city government in municipalities.

Orchard Questions.

Will you, in the next Cultivator, state the best method of grafting two-year-old walnut trees? Does the growth of moss on fruit trees affect the fruit production? If so what is the best wash and not injure the tree? If a fruit tree enters dormant state in dry condition does it absorb moisture during the dormant state?—J. H. S., San José.

Cut off the tops and graft the sprout with a tongue graft.

The growth of moss does not directly affect the fruit production, but it is a harbor for various fungus diseases and should be kept off by spraying with white wash or lime salt and sulphur.

There is no time in the life of a tree when it stops absorbing moisture. When the soil gets so dry that the tree cannot absorb any, it will dry up and die. When a branch is cut off in the dormant stage, this is demonstrated. Less moisture is absorbed when dormant than when growing.—J. W. M.

Sorghum on Alkali.

I have a small piece of ground which is quite strong with alkali. Would not sorghum be a good crop to sow on it? If so please advise me as to time of planting and manner of handling. I want to use some as a forage crop.—R. R., Fowler.

Sorghum was the first crop to grow well on land that was being redeemed from alkali. It is possible to have it too strong for sorghum. The time to plant is as soon as the frosts are over. April is about as early as I care to risk it. Prepare the land carefully by plowing and harrowing it fine, then sow it in rows close in the row; we drilled it in, making the rows three feet apart. It is cultivated between to keep down the weeds and if it checks in growth it is furrowed out between every other row and irrigated As soon as it is three or four feet high it can be cut, but not below the last joint. It will start to grow again at once. The best variety is the Early Amber, it does not make troublesome roots. Some varieties are bad as having roots that require a wagon to haul off the land. Try this and please report it back to the Cultivator to help the next one that is in a puzzle. You know we often help others as much by our failures as by our successes.—M. E. S.

Table Grapes.

Will you please let me know what variety of table grapes will do best on heavy soil. How far should the rows be apart and how far apart in rows at what age do they bear, and something about their cultivation? How many times should they be irrigated after planting.—N. E. M., Santa Ana.

Purple Cornichon, Flaming Tokay and Muscats do well on heavy soil. We favor rows ten feet apart and the vines eight feet apart in the rows for strong growing varieties. You should get some grapes the third year and a good crop the fourth year, with perhaps the exception of Cornichon, which is late in coming into full bearing. Plow once and cultivate till after rains are over and often enough after that to keep the weeds down. Irrigation depends on the soil. On some soils irrigation is not necessary. That is a question that you will have to work out yourself. It depends on your land.—J. W. M.

Oyster Shells.

Kindly answer the following question through your paper.

How much oyster shell does a White Leghorn hen need per year, if fed every day in the mash?

Thanking you in advance.—J. R. H., Arroyo Grande.

Oyster shell should not be fed in the mash, although I have once or twice done so for a very few days. Oyster shell should be placed in a small box or hopper before the hens at all times so that they can take what they require to make the egg shells. The hens require the lime to make the shells when they are laying and it altogether depends upon whether a hen is a prolific layer or not how much lime she requires. Scientists have found that the body of a hen contains from three to six per cent. of mineral matter when she is not laying, and from six to ten per cent when she is laying. If you mix the lime (oyster shell) in the mash the chances are that you will overdo it and give the hen indigestion, whilst if she can help herself as she needs it she will take the right amount and the probabilities are that she will eat about four ounces per year. It all depends upon what other food and what kind of grit you are feeding her.—Mrs. A. B.

Avocado.

Will you kindly inform me where I may purchase the avocado or alligator pear? I do not see it advertised in the Cultivator.—A. J., Santa Barbara.

Nearly all our advertisers have them or will get them for you. Any advertisers who will phone or write us that they have them in stock, will be sent the enquirer's address.

Standard of Perfection.

Do you still have the Standard? How much is it including postage? Is the Brown Leghorn male and female illustrated in colors or just black and white? Can you mention some book as a guide to mate Brown Leghorn to produce standard male and female?—M. H. V., Pomona.

You can get the Standard of Perfection at any poultry supply house. The price is $1.50. The Leghorns are not illustrated in colors in it. The book published by the Reliable Poultry Journal Publishing company, Quincy, Ill. called "The Leghorns," giving illustrations in colors and directions for mating, etc., is what you need. You can get it by writing to Quincy or at Henry Albers, 315 So. Main St., Los Angeles.

Fertilizer for Grain.

You will confer a favor to tell me through the columns of the Cultivator the kind of fertilizer to use for a light sandy loam for wheat and oats and how to mix and to use same. I have plowed the ground about seven inches deep and expect to harrow or cultivate grain in.

Would it do to sow fertilizer and grain after it was well up and harrow in, or will grain do better if fertilizer is sown with grain.—J. S. C., San Jacinto.

Use a fertilizer high in phosphoric acid and low in nitrogen and potash.

Use acidulated bone and potash.

Your soil may require a different amount than other soils, but we would suggest about 250 pounds of acid bone to 50 pounds of sulphate of potash per acre on one piece, a little more on another and a little less on another and in another season you will be able to instruct us. The bone will contain considerable nitrogen.

Drill the fertilizer in deeper than the grain.—J. W. M.

Bacteria.

Please give, in Queries and Replies, what information you can about bacteria for alfalfa, does it really increase the yield, and where the culture is used will the seed be more apt to grow?— A Subscriber, Lancaster.

The bacteria culture is useful only when the soil and seed are not inoculated. The seed is no more apt to grow by being inoculated with the culture, but it almost always induces a ranker growth even though the culture fails to inoculate the seed. This is due to fertilizer elements used in making the cultures. The young plants themselves draw on them.—J. W. M.

Green Alfalfa.

Kindly advise me through your columns if it would be advisable to plant alfalfa in runs for little chicks. Will it cause diarrhoea and has it any bad effect on little chicks.—T. H., Santa Ana.

Alfalfa is excellent in runs for little chicks, Nothing is better. It will not give diarrhoea, but the chicks will be likely to kill it off if kept on it too long a time. Little chicks should be fed green food from four days old every day to make good growth. It will not give them bowel trouble unless it is fed irregularly, that is if it is omitted for several days or a week and then suddenly a large amount is given, it may then at first act on the bowels, otherwise it will make them sturdy and give good growth. The rest of the ration should be properly balanced.—Mrs. A. B.

Calimyrna Figs.

In response to a request for information regarding the Calimyrna fig we beg to state that if your land is near the coast we hardly think it will be advisable to plant it as it requires a warm dry atmosphere in order to successfully dry this fig and in addition to this we fear that the figs would not mature properly in a location so near the coast as yours is.

We would not advise erecting a packing establishment where there is only a limited product to be handled as there are always commercial concerns ready to handle a product of this nature. In addition to this they are in position to pack and handle the product better than one individual who has a very small output at his disposal.—G. C. R.

Distillate Emulsion.

Does the Cultivator know of a formula for making a crude oil emulsion, such an emulsion as would be an excellent fly repellant; also I believe it the best thing I could use to spray my cattle with to kill Texas fever tick owing to its cheapness. I could use great quantities of it and by the use of a large force spray pump, could do so very effectually. Any information you can give me in regard to working such an emulsion, would be of great benefit to me and some of my neighbors.—S. S., Oceanside.

I do not know, but hardly think that the mixed compound in crude oil will emulsify, I cannot answer this question, but have sent it on to Prof. Jaffa and will send you his reply when it comes.—M. E. S.

Windbreak.

I would like to know through the columns of the Cultivator, what kind of a tree to plant for a wind-break something that would grow fast and still not injure the ground like the blue-gum? By answering, you will greatly oblige a reader of the Cultivator.—A. B. J., Santa Barbara.

As far as we know such a tree does not exist. Any tree that grows fast has to reach out and get its food in a hurry. That is what makes the blue-gum grow so fast.

You will find that fast growing trees do not root as deeply as slower growing trees, moisture conditions being equal. It is so with the different species of eucalyptus.

Soil Analysis.

Please let me know who analyzes soils, as I have some which I do not understand.—W. E. T., Lathrop.

You had best send to the State University for instructions how to take samples of soil for analysis. They make a light charge for the analysis, about $2.00 we believe, which is only a fraction of the cost. They do this, however, to protect themselves, for if no charge was made they would be overwhelmed with applications.

Hardiness of Walnuts.

How hardy are English walnut trees? Will they grow in Washington?—E. J. C., Fresno.

The trees are quite hardy and will grow either in the State or city of Washington (we don't know which is meant,) but may not grow nuts in either place. There are some sorts which bear well in the state of Washington, but are not the ones grown in Southern California.

Care of Young Turkeys.

I should be pleased if you could give an article on the care and feeding of young turkeys, as I think others besides myself would be interested. Your suggestion shall shortly be followed, but if you are ever in doubt "Consult Nature." What would Nature feed young turkeys where she hatches them, only in the months of April and May?—Mrs. A. B.

About Dogs.

Is there any periodical published on dogs in this state? Would like addresses of someone having pure-bred St. Bernards, for I have a bitch I would like to breed.—J. A. Wood, Clearwater.

We know of no dog paper in the state. Doubtless your address will be noticed by someone who has St. Bernards.

Drying Mushrooms.

Kindly advise me in your paper about the best method of drying mushrooms, especially chamignons. Thanking you in advance I am,—R. S, Redwood City.

We give it up, who knows?

Potato Blight.

I have seed potatoes from the north where the plants had the blight. Will they blight here?—V. D., Petaluma.

They certainly will. The blight is carried over in the tubers generally and the seed should be changed. If you have already planted, spraying with Bordeaux mixture on the tops will hold it in check, but do not again plant infected seed potatoes.

Bulletin 164.

I see in an article in your paper mention of an article on poultry in Farmer's Bulletin No. 164. Would you kindly let me know where to send for this.—A. K. S., Imperial.

Agricultural Experiment Station, Berkeley, Cal.

Eucalyptus from Seed.

Will you kindly tell me in the columns of your paper how to grow eucalyptus trees from seed.—E. B., Lankershim.

This was answered last week.

HOLSTEIN-FRIESIAN SALES.

The following sales of Holstein-Friesian bulls are reported in California for the week ending February 9:

Butter King, J. Rouch to Chas. D. Pierce, San Francisco.

Creamelle De Kol Keyes, E. G. Wharton to W. C. Wade, Visalia.

Sir Silver Gloss Creamelle, E. G. Wharton to C. E. Rush, Tulare.

Reports from Frazier valley near the borax mines are that many head of cattle have perished there. It appears that the cattle were far up in the mountains and were snowed in, and on account of the depth of the snow the owners could not get them out and they died for the want of food. Eight hundred head of the cattle belonged to the Snedding ranch, and they were valued at about $12,000.—Tulare Register.

A Santa Barbara Exchange says: "For preserving fruits and marketing the products a $1,000,000 corporation is to be formed here shortly, with Ellwood Cooper, State Horticultural Commissioner, at its head. Secret processes are to be used and the stock is to be placed in escrow, to prevent its being gobbled by the railroads. R. B. Canfield of this city, Charles Blagburn of Antioch and P. G. Galpin of San Francisco will be directors of the company, to be known as the American Fruit Company."

The approval and support of all friends of the Dairy Industry is urged in support of Senate Bills Nos. 66, 67 & 92, relating to appropriations for the California Polytechnic School, at San Luis Obispo: Nos. 343, 348, 349 & 455, relating to the duties of, and appropriating funds for, Inspection work of the State Dairy Bureau and defining standards of Dairy Products.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fever Outfits See O. J. Weder Co., 555-557 So. Los Angeles St., Los Angeles.

LINERS

Liner Advertising

Advertisements in Liner Column 1¼ cents per word. Eight words to a line. No advertisement taken for less than 25 cents.

BERRIES.

FOR SALE — LONGWORTH PROLIFIC Strawberry Plants, $2.50 per 1000. "Dollar" strawberry plants, $2.50 per 500. TRIBBLE BROS., Elk Grove, Cal.

DUROC-JERSEY PIGS.

PINK PIGS PAY—FOR SALE—THOROUGHbred Duroc-Jersey Pigs, both sexes, eligible to record; pedigrees furnished; 7 months old and in good flesh. Price $15.00 each, crates free. M. EVERHAM, R. F. D. 2, Box 73, Kingsburg, Cal.

JEWELRY.

VICTOR BEAUTY PINS—ENTIRELY NEW idea in fasteners for collars, cuffs, dresses, children's clothes, etc. Set of 3, 25c postpaid. Agents wanted. MERRILL & CO., Suite 426, Mason Bldg., Los Angeles, Cal.

POULTRY WANTED.

WANTER—THE ADDRESS OF PARTIES having white guinea fowls or their eggs for sale. Address J. S. DOUGLAS, Bin 7, Bakersfield, Cal.

POULTRY.

HARRISON'S R. I. REDS AND WHITE Rocks. The best out West; 12 awards at Poultry Breeders' Show, including 1st and 3rd Red cockerels, 1st and 2nd Red pullets in a class of 36 pullets; White Rocks 1st pen, 1st and 3rd pullets and 3rd cock. New circular. Eggs $2.00 for 15, $5.00 for 50, $8.00 for 100. LAKE AVENUE POULTRY YARDS, 757 N. Lake Ave., Pasadena, Cal.

HOLMBY POULTRY FARM, Breeder of S. C. Black, Buff and White Orpington, Barred Rocks, S. C. White Leghorns, Pekin Ducks, Mammoth Bronze Turkeys, Tumblers and Homer Pigeons, 130 Prenuims won at 4 shows. stock and eggs for sale,—write your wants. ARTHER LEITH Prop., WILL PURDY, Manager, Hollywood California.

GOLDEN LACED WYANDOTTES—BLUE ribbon winners wherever shown. At Oakland, 1907, won 4 first, 3 second, and 2 third prizes—score 90 to 94 1-4 points. Eggs from prize-winners, $2.00 per setting. Fine breeders at lowest prices. Eggs proven infertile will be replaced if returned to me at buyer's expense. J. P. ENGLISH, Arroyo Grande. Cal.

ORPINGTONS AND REDS; PEKIN DUCKS—13 prizes on 16 entries also silver cup at "Breeder's Show" 1907. Eggs now ready, can't help but hatch winners, we breed them that way, fifteen years' experience counts. Our stock are great layers, rapid growers, top market quality, we guarantee satisfaction. GOODACRE BROS., Box 45, Compton, Cal.

ARMOUR'S BEEF SCRAPS, MEAT MEAL, and Blood Meal for poultry feeding are highest in digestible protein. If your dealer does not handle them write us direct. Circular containing formulae free. THE ARMOUR FERTILIZER WORKS, 736 H. W. Hellman Building, Los Angeles.

McKINLEY POULTRY FARM—BREEDERS of buff and white Wyandottes. Member American Buff Wyandotte Club. Golden Seabright and Pyle Game Bantams. Eggs $3.00 and $2.00 per 13. Take San Pedro Interurban car to McKinley, first house north. BOX 11, R. F. D., Gardena, Cal.

BLUE ANDALUSIANS—I did not exhibit this year but have better stock than ever. Eggs for hatching, $2.50 per 14. Incubator lots $7.50 and $10.00 per 100. No fear of inbreeding as we have three strains. MRS. T. R. GRIFFITH, 3111 Walton Ave., Los Angeles.

FOR SALE—BARRED ROCKS, WINNERS OF 11 prizes and Silver Cup for Best Barred Rock Male at Breeders Show, 1907. Some choice cockerels for sale. Eggs. Write your wants. Frederick Espe, 4425 So. Main St., Los Angeles, Cal.

SINGLE-COMB WHITE LEGHORNS, FINE white, large, birds; good layers. Hatching and shipping chicks. Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER, Ontario, Cal.

FOR SALE.—EGGS FOR HATCHING. From Buff Leghorns and Barred Plymouth Rock fowls, good color, fine layers. Eggs $1.00 to $1.50 per 15. Wm. C. PARKER No. 111 Pacific Ave. Santa Cruz, Cal..

WHITE LEGHORN AND WHITE WYANdotte eggs for hatching, from extra choice, trap-nested, bred-for-eggs stock. Leghorn eggs $5.00 per 100; White Wyandotte eggs $1.00 and $1.50 per setting, $6.00 per 100. F. T. McLAUGHLIN, Gardena, Cal.

S. C. WHITE LEGHORN EGGS FROM THE bred-to-lay Blanchard strain. Large birds. $1.00 for 15; $6.00 per 100; Free city delivery. C. M. GIBBS, R. F. D. No. 4, Los Angeles, Cal. Phone W. 591.

FOR SALE—PURE BRED STOCK, S. C. White Leghorn Eggs. Large eggs, great layers, eggs for hatching only. $1.50 per 15 $6.00 per hundred. RICHARD POWERS. Anaheim. Cal.

FOR SALE—WHITE WYANDOTTES, SILVER Cup Winners at late show. Choice Stock for sale. Eggs, $2 per setting, $10 per 100. Mrs. Mary Van Brunt, Avery and Benefit Sts., Hollywood, Cal.

CHILEAN WATERMELON SEED.—EXTRA select. No seed from culls. By mail, 4 lbs or less, 75 cents per lb; over 4 lbs. by express 60 cents per lb. S. FAIRBURN, Burbank, Cal.

FOR SALE—EGGS FROM TWO PENS OF extra fine White Plymouth Rocks, $2 per 13. FRANK H. THOMAS, 1820 Hobart Blvd., Los Angeles, Cal.

FOR SALE—STANDARD BRED BUFF ORpington cockerels, full grown, fine birds, price $3.00 and $4.00. C. ROTH, Clovis, Cal.

FARM LAND.

MEXICO—FARM LANDS—CHEAP— Similar to Southern California. Railroad building. Address H. A., 1816 New Hampshire St., Los Angeles.

FOR SALE.—40 ACRES OF IMPROVED land. Good buildings; free water. W. L. WEAVER, MERCED, CAL.

FARM FOR RENT.

FOR RENT OR SALE—20 acres, 2 miles from Modesto, on main canal; 5½ in fine alfalfa, balance in oats; water with the land. Rent $350. S. E. BABSON, Modesto, Cal.

TREES.

FOR SALE 5 M. S. S. VOLUNTEER TREES from 2½ to 5 feet high, at 1½ to 2½c each in lots from 10 to 50. Send in order at once. A. J. HIXSON, Route 2, Box 45, Burbank, Cal.

FOR SALE—GRAFTED WALNUTS, PLAcentia perfection on wild roots, 8 to 12 feet high, one year old and some two years old. For further particulars address ADOLPH RIMPAU, Anaheim, Cal.

FOR SALE.—500 MISSION OLIVE TREES 20 to 25 dollars per 100, fine stock. H. L. BAUER & SON, 737 So. Spring. St.

TURKEYS.

FOR SALE—11 TURKEY HENS; SOME ARE laying; all have mated with full-blood bronze gobbler. Price $2.50 each. Address R. D. BOX 68, Santa Ana, Cal.

Egg Producers

Wright's Strain of Black Langshans

are acknowledged to be the best. At the last San Diego show twelve of our birds had an average score of 93 7-12, by Browning, an Eastern judge, winning five first, three second, and four special prizes. Among the latter was the Harry McIntire Asiatic Cup for best trio. No better egg-producing fowls known than my strain of Black Langshans. A few fine cockerels for sale $5.00 and up. Eggs $2.00 per 13. For particulars, circulars, etc., address

J. M. WRIGHT

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DEL PASO POULTRY YARDS

BOX 127, BEAUMONT, CAL.

Thirty Large White Wyandottes To make room. Write for prices

Eggs For Hatching

FROM

Standard Bred Poultry

Buff and Brown Leghorns, Buff Orpingtons, Columbian Wyandottes and Bronze Turkeys

W. W. Bliss, Duarte, Cal.

East San Gabriel Egg Ranch

S. C. WHITE LEGHORNS
BARRED P. ROCKS

Eggs for hatching $1 per 13 $5 per 100 We breed from two year old hens, and the best ones of the flock only. No stock for sale. Ranch two blocks south San Gabriel car line.

Swanson & Johnson ***San Gabriel, Cal.***

Eggs for Hatching

Thoroughbred White Rock eggs for hatching at $1.50 for 15 $6 per hundred.
Mammoth Bronze Turkey eggs, 20 cents each.
Also a dozen choice W. R. cockerels and two M. B. gobblers for sale.

Jennie R. Frater **Charter Oak, Cal.**
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O. K. Trap Nests Shows the hen that lays the eggs and keeps her from eating or breaking it after it is laid.

O. K. Feeder Just the thing for your Scratch Shed. Send for circular explaining its workings.

C. B. Williams
Box B **Ontario, Cal.**

White Rocks The best kind and the best of the kind. Eggs until further notice, 15 for $1.25 or $5.50 per 100.
White Plymouth Rock Ranch
J. T. DAVIS, Prop. POMONA, CAL.

Turkey Hens and Turkey Eggs
For Sale
Geo. Louis T. Rivard, **Fillmore, Cal.**

For Sale, Jersey Bull

Two Years Old

Sire, St. Lambert of Westminster, 60438.
Dam, Woodstock Lyl, 125640. Address
W. J. Cole, Anaheim, Cal.

Parties wishing to see the animal can take Santa Ana electric and get off at Hansen station; walk one-half mile East.

For Sale Heifers and Cows

We have several head of young heifers, six months to yearling, also about ten head of Hereford cows which we will sell at a bargain. Could make up carload. They are now located at Ravenna, Cal.

STERLING MILK CO.
Room 232, 411 So. Main St., Los Angeles

For Sale Our Herd Bull Sargent Fox, 64833

As we have dispersed our herd, except a few heifers for home use, we are forced to offer for sale this valuable sire. We will sell him at a low price to a breeder who is in a position to give this bull a chance to make a record.

Leffingwell Rancho. Inc., Whittier, Cal.

HERE'S AN EXAMPLE of what plant foods can do for farmers. The picture on the right shows plant development and potato yield (55.8 lbs.) of a small patch, treated with

POTASH

On the left, a patch of same size (yield 21 lbs.) planted at same time, in same soil, but *untreated*. These pictures are taken from an experiment station bulletin, compiled in

Our Free Book, "Profitable Farming"

which gives authentic and authoritative accounts of experiments and actual results of practical and scientific farming. It is invaluable to the farmer who is anxious to improve his products and who is working for a wider margin of profits. Send for it to-day.

GERMAN KALI WORKS, 93 Nassau Street, New York

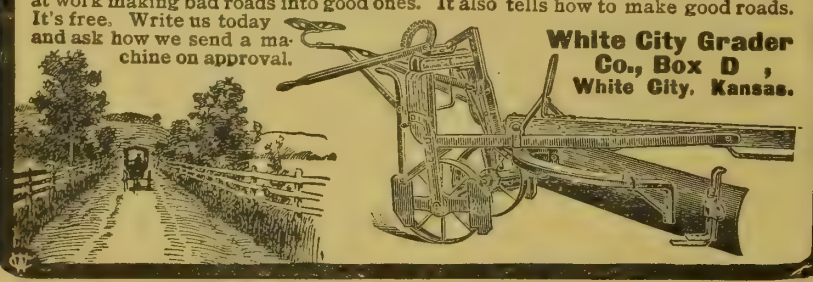
Meyer, Wilson & Co., San Francisco, Cal., are Sole Agents for the Pacific Coast

IT'S DELIGHTFUL to RIDE ON A SMOOTH COUNTRY ROAD

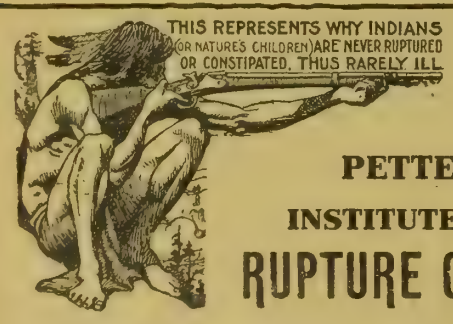
not only for pleasure but when you're hauling two-ton loads of baled hay. It's possible to have them when the dirt is handled right. The 20th Century Grader does it cheaply, quickly, thoroughly. No matter how clayey, muddy or rough the dirt road, it can be changed in 24 hours to a level, smooth, rutless highway. This machine is worth hundreds of dollars in the spring or fall—just the time when farmers haul their year's earnings to the market. The

20th CENTURY GRADER

is strong, rigid, durable. Puts the dirt anywhere you want it. It is easily guided and handled; light draft, two horses and one man can grade and shape a road in double-quick time. Mould-board is reversible and can be turned to either side to angle of 50 degrees. Patent shoe equalizes depth to which scraping edge cuts. Send for our new book "Delightful Roads" and see views of 20th Century Grader at work making bad roads into good ones. It also tells how to make good roads. It's free. Write us today and ask how we send a machine on approval.



White City Grader Co., Box D, White City, Kansas.



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INSTITUTE AND UTILITIES CO.

RUPTURE CURED By Assisting Nature Alone

Ask Mr. Sornighausen, aged 80 years, 218 E. 30th st., Mr. John Clements, aged 82 years, Hotel Cumberland; Mr. Douglass Maylen, Hollywood; Mr. Louis Fletcher, Mgr. Hollenbeck Cafe; Mr. Joseph Welland, 332 E. First street, and a list of about five dozen more cured people, for the asking. I ask the opportunity of explaining the method. Call or write. You won't be asked to buy.

TRUSSES not alone made to fit, but to wear and hold. I make 15 KINDS, our own inventions, including several new styles, but never elastic trusses. All other mail order trusses are simply common elastic trusses.

DEFORMITIES abolutely corrected and cured with the most improved and comfortable appliances known. Our own invention. I also make elastic stockings, combination, large abdomen, supporting and reducing belts; also eight other kinds of supporting belts. Shoulder braces and Men's Suspensories, appliances and methods to cure the following ailments by home treatment. Falling womb and ovarian pains, floating kidney, navel and after-operation rupture, weak or lame back, leucorrhea (whites) or an irritated condition of the womb or vagina, constipation, itching, bleeding or protruding piles, varicose or enlarged veins, limbs, joints, sprains or dislocations, flat foot, sick headache or dizziness, especially in the aged; varicocele, hydrocele. We also carry complete maternity outfits for confinement cases and all sick room supplies and nature cure utilities for all physical weaknes. We now enjoy a large and satisfactory mail order business in all the varied lines and guarantee satisfaction to you or refund the money. Write us freely.

There is but one disease—Blood Congestion. And but one cure—Blood Circulation.

We have an institute in connection, wherein we treat all diseased conditions and force circulation by natural methods only. Consultation free. Separate rooms for ladies. 15 years' experience along this line.

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General Agriculture

CLIMATOLOGY OF INSECT PESTS.

INSECTS pests of the more malignant kind seem to be barred from the temperate regions where white men mostly live; thus the yellow fever mosquito, the stegomyia fasciata, which is the carrier of the germ of yellow fever, and the brown spotted mosquito will not live under the normal conditions of a latitude more than 48 degrees above or below the Equator.

But as an article by Mr. F. Theobold, President of the Association of Economic Biologists, points out, no one can ever tell how an insect pest will behave when placed in a new enviroment, and he shows that the spread of injurious insects by man's own vehicles of communication is a danger so real that it demands legislation to prevent the damage which may result from it.

We need only point to the ravages wrought by the cotton boll-weevil, the area infested by which has doubled in one year, to indicate the economic dangers; but there are many other insects the dominion of which is world wide, and the extension of which can usually be traced to artificial importation.

The codling moth, which has done millions of pounds worth of damage to apples threatens to spread from the United States and Canada to Australia, New Zealand, and the Cape. Its original home was in Europe. Similarly the San José scale, which attacks plums, and was originally imported into America from Japan, is now threatening Canada, Australia, and Europe.

The continents continually repay one another these bad debts. The Hessian fly, for example, a corn pest which is sometimes attributed to North America, came originally from Europe, and is known in Siberia. The insects were imported into America with straw by the hired Hessian troops of George III. The flies took up their abode in Long Island, and gradually spread over the wheat-growing acres of North America.

The stegomyia, or tiger mosquito, of which we have already spoken, is perhaps to be regarded as one of the insects which now threatens mankind. It is now to be found in every continent, and it easily breeds in the tank of ships, as it now does on Nile steamers. All the stegomyia are not, of course, infected with the yellow fever germ. If they were the threat to mankind would be great indeed.

LESSON IN INTENSIVE FARMING.

Just west of Yuma, Arizona, in the alluvial flood-plain of the Colorado, lies a little farm of 7.2 acres, which on May 1, 1905, was virgin bottomland, covered with saltweed, arrowbrush and creosote bushes. The original purpose of the tract was for planting selected varieties of date palms imported by the United States Department of Agriculture from the Old World. The Experiment Station, May 2, began preparing the ground, and on May 20 the work of levelling bordering and irrigating the tract and the planting of 152 palms, was completed.

The Plan of Work.

Recognizing, however, that a farmer with his living to make meantime, cannot afford to wait for an orchard to come into bearing, it was planned to plant crops for quick returns between the tree-rows, thus putting the work on a feasible basis from the small farmer's point of view. In order to economize ground the irrigating borders were so placed as to coincide with the rows of palms, thus utilizing space otherwise usually wasted. The tract was divided by the borders into lands, for the most part one-half an acre in size. Irrigating water from the Colorado Valley P. & I. Canal was obtained in the customary manner, and E. L. Crane, himself a Yuma Valley farmer, undertook the care of what was nicknamed our "play farm."

In size, as well as in the intensive character of the work planned, this "farm" is the opposite of the average holdings of this locality. The prevailing crops of the region are alfalfa, corn, barley, and forages in general, comparatively little attention being given to vegetables and fruits. Withal, the cost of levelling land in this region is high, rarely falling below twenty dollars an acre at current prices for labor and teams. Moreover, the cost, exclusive of maintenance, of the Government irrigating system now under construction will be about $3.50 an acre annually for ten years. To meet these and other heavy items of expenses in connection with the establishment of a farm in this region, intensive crops of a more remunerative character than those now in vogue, are essential. It was partly, therefore, as an object lesson bearing upon these financial aspects of the general situation, that this cultural work was planned.

Reclamation of the Ground.

The soil of our tract, a warm, sandy loam well adapted to gardening operations, was leveled, ditched and bordered at a contract price of $17.20 an acre, considerably less than the average for the locality, reckoning the labor of men and teams at current rates. In addition, barbed wire and posts for fencing cost $60.10; lumber for headgates cost $39.57; a drive well point and pipe, a pitcher-spout pump and a barrel, $13.45; a small lumber two-room house, including 5 1-2 days carpenter hire, $152.75; and a brush-roof shelter for horses, about $5.00. Only skilled labor employed in leveling, bordering and ditching the ground, and for part construction of the house, is included in the above estimates, as the common labor required ordinarily would be, and in this case was, furnished by the farmer himself.

To bring this ground under cultivation and make it habitable for a small farmer and his family, as stated above, therefore required cash outlay of about $400.00. In addition, in the average instance must be included a team, wagon, plow harrow, haying equipment, shovels, hoes and other small tools.

Crops and Markets.

The crops selected for the season of 1906 were Early Rose potatoes, White Bermuda onions, Rocky Ford cantaloupes, Dwarf Champion and Burpee's Quarter Century tomatoes, and alfalfa, besides a few hills of watermelons and sundry vegetables.

The produce was marketed in Yuma with the exception of tomatoes, which, for the largest part, were expressed to Tucson and Bisbee. The statement for the crops is on the basis of net cash returns to the small farmer, who with an average family of five and a team of horses is assumed to do the work required, as explained below. Items necessitating cash outlay, as seed, irrigating water, and crates

are deducted from gross returns. Water cost an average of 50 cents for irrigation per acre for the crops grown. The yields in certain instances are low, due to the unimproved condition of soil, which like desert soils in general was low in nitrogen and organic matter. Some small salty areas also affected yields locally.

From the viewpoint of the small farmer this statement shows that from less than five acres of ground its first season of cultivation, with the help of a team fed on the place, a cash capital of $127,92 and an amount of labor easily afforded by an able-bodied family of five, a net cash return of $800.17 was obtained. Taxes, repairs, and about six days work by man and team in necessary ditch cleaning, are not included in the statement but these items were about offset by a surplus of three tons of hay, and unsalable residues from the various crops grown which contributed substantially to the welfare of those living on the ground.

Meantime, the soil has been improved by cultivation, irrigation with muddy river water, and the addition of barnyard manure from alfalfa grown and fed on the place. Also, the date palms, out of the way on the borders, have made satisfactory progress.

SILK CULTURE IN CALIFORNIA.

Silk should be produced in California:

First. Because it is one of the three great textile industries of the world—and it has enriched every nation that has fostered it.

Second: Because, we as a nation, make use of nearly one-half the silk produced in the world.

Third. Because we have in superabundance all the essentials necessary to produce silk. We have vast tracts of uncultivated land. All varieties of soil and climate.

Fourth. Because the cultivation of the mulberry tree, and the production of silk from the silk worm would give renumerative and healthful employment to many thousands of men, women and children.

Fifth. Because we as a nation send out to foreign countries every year $50,000,000 to $75,000,000 for raw and reeled silk to keep our thousand silk factories supplied with material to work up.

Sixth. Because this amount of money if kept at home would broaden the fields of labor for the bread winners of our own country, and at the same time give us as a people better prestige in the world of nations.

Seventh. Because the fact of being able to produce and manufacture our own most desirable textile fabric would render us more independent in times of peace or war. We might export far more than we now import, if the Agricultural Department would take steps to develope this industry and the people would take hold of the work.

The question of cheap labor is always brought up as an objection to the silk industry being attempted in the United States. But this question is more than offset by our superior advantages.

First. We have a free, ambitious, inventive people. Our government is for the people and by the people, and every man has a right to exercise his ambition in any line of business he wants to engage in.

Second. We have a free soil and every man can be the possessor of his own acres for no greater a sum than the peasantry of Europe and the Orient pay for rent every year.

We also have more generally diffused scientific knowledge how to bring out of the soil the very best results.

Third. That same general knowledge of the best scientific methods how to treat living nature in all forms of animal life is ours much more largely than to be found in the silk-producing countries of the world.

Fourth. Our long and favorable seasons which give us more than three times the results obtainable either in the orient or the silk countries of Europe, both in foliage and the insects that feed upon it and the combined result of both.

These statements are given to the public with the hope of calling attention to the silk industry of our country. It seems to be high time that some definite action were taken in this matter. We have been too long indifferent to this great industry if the foregoing statements are correct (and I challenge anyone to disprove them.)

Thus we hold ourselves up to the ridicule of the world in failing to do what every civilized nation has been doing for centuries, namely; Giving encouragement to every branch of industry that has for its object the good of the people—the enriching of the nation.—Mrs. Carrie Williams.

DISCING ALFALA.

Prof. R. H. Forbes, of the Agricultural Experiment Station at Phoenix, has just finished interesting experiments in disc harrowing in the cultivation of alfalfa. He says, in part:

"The sharp discs, when set at the right angle, split and spread, the plants causing them to stool and send up an increased number of shoots.

"The operation should be carried on after a cutting or in winter when the alfalfa is stubble. While the discing tends to conserve the soil moisture, it also incorporates with the surface soil much fertilizing material, especially the alfalfa leaves lost in the process of haying.

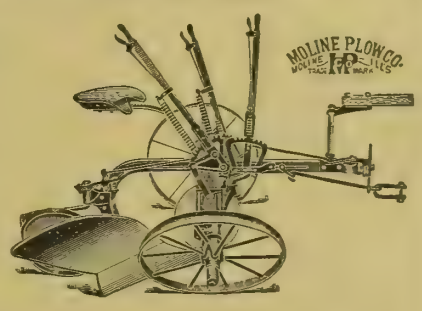
"The process of discing also tends to exterminate all alfalfa pests peculiar to the location. During the process of irrigation by silt-laden water, deposits accumulate upon the surface of the field which are alike impervious to air and water. The amount of deposit is greatest at the head of a field, decreasing as it reaches the end, and experiments were made at Yuma which showed that the depreciation in the second crop was 6.3 per cent. less than the yield of alfalfa on account of the silt-blanket. At Mesa, Arizona, it was noticeable that a fourth crop irrigated by clear water was heaviest near the ditch where the silt deposit was slightest. Cultivation by means of disc and springtooth harrow is the best available means of handling the silt accumulations in the cultivation of alfalfa."

Prof. Forbes states that the average alfalfa crop in Arizona can doubtless be increased 10 per cent. by discing.

POWER OF EXAMPLE.

Knock and the world knocks with you;
Boost, and you boost alone!
When you roast good and loud,
You will find that the crowd
Has a hammer as big as your own.

"The Recollection of Quality Remains Long After the Price is Forgotten."
Trade Mark Registered
Tool Requirements
KEEN KUTTER
What do you expect of a hammer—a rightly formed handle that can't work loose or come off—a face you cannot batter—the true hang and balance for straight driving? Then you must get a hammer on which this name appears.
KEEN KUTTER
Tools
No matter what kind of tools you want, this name signifies that every requirement in quality and service will be met.
Keen Kutter Tools include not only Carpenter Tools of all kinds but also Forks, Rakes, Shovels, Hoes, Manure-hooks, Pruning-knives, Grass-shears, and all kinds of Farm and Garden tools. Each tool is the best of its kind and is guaranteed.
If not at your dealer's, write us.
TOOL BOOKLET FREE
SIMMONS HARDWARE COMPANY,
St. Louis and New York, U. S. A.

30,000 FARMERS
Bought Good Enough Sulky Plows
last season. Since its introduction the sales on this tool have increased rapidly from year to year until last season it required, in round numbers, 30,000 to supply the demand. This ought to interest a man who is going to buy a plow. It means that after due consideration 30,000 farmers agreed that the Good Enough is
"THE BEST PLOW ON EARTH FOR THE MONEY"
A MOST DESIRABLE AND ECONOMICAL FEATURE IS THE EASE WITH WHICH BOTTOMS OF DIFFERENT SIZES CAN BE FITTED TO THE SAME BEAM.


The Good Enough is extremely simple. It has the desirable features of up-to-date and high priced sulky plows without the complicated construction of the very high lift type. The land axle has a yielding spring—uneven ground does not affect depth of furrow. **Turns square corners either right or left.** The landing lever and swinging clevis permit the operator to change the land of the plow instantly without stopping the team or leaving the seat. It is furnished with pole attachment when ordered. Made right and left hand. Sizes from 10 to 18 inches. Bottoms for every condition. Will plow any soil that can be plowed with a moldboard plow.
Wheels Have Removable Hub Boxes---DUST PROOF, OIL TIGHT
The Good Enough ALFALFA BOTTOM has no equal.
ASK YOUR DEALER TO SHOW YOU THE GOOD ENOUGH.
Send us your name and address, enclose four cents in stamps (to pay postage and mailing) and we will send you our
Flying Dutchman Song Book and Junior Plow Catalogue Combined
containing twenty-six old familiar songs with words and music.
MOLINE PLOW CO., MOLINE, ILL.
MOLINE PLOWS AND OTHER FLYING DUTCHMAN FARM TOOLS
Makers of the Famous Moline Plows and Other Flying Dutchman Farm Tools, Mandt Wagons and Bob Sleighs, Light Running National Manure Spreader and Henney Buggies

THE CHATHAM FANNING MILL

WITH BAGGING ATTACHMENT will clean and grade any kind of grain, taking wild oats, cockle, and wild radish seeds from wheat or barley; cleaning and grading oats, cleaning beans, peas and any kind of clover or timothy seed. Every machine is guaranteed to do the work; is sold on THIRTY DAYS FREE TRIAL, all freight charges paid. Write for my free book, "How to Make Dollars Out of Wind," and "A Remedy for the Smut Evil."
GEO. W. FOOTT
321 E. MORRISON ST., PORTLAND, OREGON

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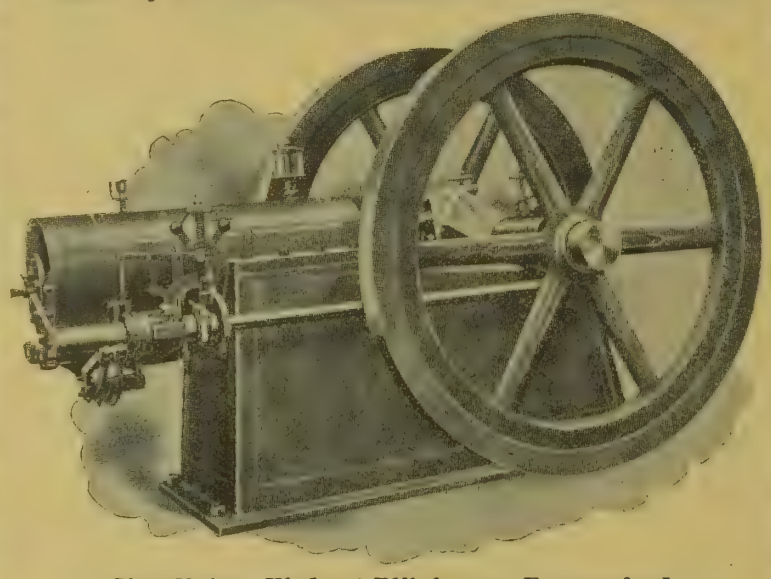
Columbus Engines

Made by the Columbus Machine Co., Columbus, Ohio



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Highest Grade of Material—Best of Workmanship

They have been in the field over fourteen years.

Their output is one of the largest in the United States.

What does this mean? It means that the present standard they are maintaining on Columbus Engines is the result of fourteen years labor of experienced mechanics with one of the best equipped plants in the United States behind them, to produce an engine which is simplicity in itself.

Free from all complicated and trappy devices. It don't take an expert mechanic to see the simplicity and good points on the Columbus Engine over other makes.

It don't take an experienced mechanic to operate it. We carry complete stock at all times. Come in and let us show you.

Estimates given on complete pumping plants.

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Greenleaf Compton Co., Agents

121 So. Los Angeles St., Los Angeles

If you can't come write us and we will send our representative.

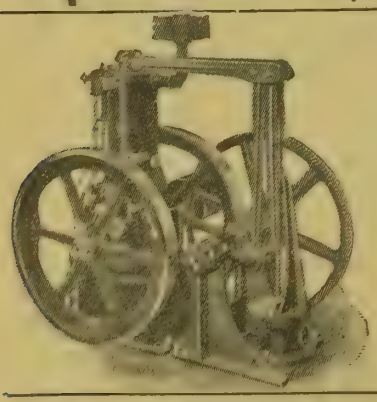
FOR SALE CHEAP

We have decided to dispose of a lot of second-hand machines, which have been displaced by

THE PERFECTION

These machines are as good as the day they were installed by the original manufacturer. Of course we can't guarantee their reliability, but if you want one we will gladly sell it to you for less than the cost of the raw material. We have about fifty of these machines and among them being a large number of "Superiors"; so before purchasing another make of machine write us for prices, at the same time we will send you circulars describing the most perfect acetylene generator on the market, THE PERFECTION. Address

Crayton Mfg. Co., Inc., Eastman Bldg., Long Beach, Cal.



A Handy Little Engine

Just the thing to run the feed cutter, the pump, the churn, the grinder, or anything on the ranch. It's well named

The Little Wonder

Write or call on

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Beef Scraps

GUARANTEED ANALYSIS :

Protein 65%
Fat 8%

Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

Raw Bone

GUARANTEED ANALYSIS :

Protein 25%
Phosphates 45%

Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods

WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

The Produce Markets

Los Angeles Markets

LOS ANGELES, Feb. 20, 1907.

Butter

The butter market is much easier at the lower prices. The feed product is moving out rapidly, which is always the case when the price comes within the reacch of all.

Local Creamery, 2lb sq. 60
Valley Creamery 55
Coast, fy, ...52½
Cooking 23

Cheese

There is a more abundant supply of cheese arriving, 62,000 pounds coming in yesterday.

Cal Young American, per lb. 18½
California Anchor 18
Cal 3-lb. hand 19½
Northern 17
Domestic Swiss 20
Imported Swiss ... .29

Eggs and Poultry

There was a material weakening in the egg market today and prices were reduced again, making the selling price for first grade 22 cents.

Eggs, local, per doz 22
Northern candled 21
Fresh Eastern 19

The following are average prices which dealers pay to producers for live weight:

Hens, per lb.... 14
Young Roosters, per lb 16
Fryers 16
Broilers, per lb 18
Old Roosters 8
Turkeys 15
Geese 12
Ducks.. 12

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lb 7.50
Prime Steers. 5
Heifers 4
Calves, per lb 5
Sheep, ewes, per head.....5.25
Lambs, per head 7.50
Wethers 5.50

Potatoes

Heavy receipts of potatoes for the past two days has weakened the market, although no change has taken place in the official selling prices.

Salinas 2.50
Burbank, Local 2.25
Highland 2.25
Sweets, Yellow, per sack .....3.75@4.00

Vegetables

Asparagus, lb.. 35
Beets, per doz ....40@60
Bell Peppers, Green, lb 5
Cabbage, sack .. ..1.30@1.50
Chili Peppers, Green .....6@7
Chili, Dried, per lb 25
Cucumbers, per doz .....1.50@1.75
Cauliflower, per doz .....40@75
Carrots, per doz .....40@60
Celery, per doz. 40
Egg Plant, per lb 15
Garlic per lb 6
Green Onions, doz. bunches .....25@30
Lettuce, per crate .....1.00@1.25
Lima Beans, per lb .....7@8

Onions are weak. Heavy supplies keep arriving and the demand does not take all that comes in.

Onions, Aust. Brown, sk .....135@1.50
Onions Y. Danvers .....1.35@1.50
Parsnips, per doz .....35@50
Rhubarb, per lb 6
Radishes, per doz .....15@20
String Beans, per lb .....8@12
Sugar Peas, per lb .. ..4@6
Turnips, doz bunches .....40@60
Tomatoes, per box .....75@1.25
Wax Beans, per lb .....16@18

Citrus Fruits

Lemons 2.00
Valencias .....1.50@2.00
Navels ....1.25@1.50
Grapefruit Seedless .....2.00@2.50
Grapefruit seedlinggs .....1.25@1.50

Fresh Fruits

Apples, Bellefluer, per box ....100@1.35
Apples, Ben Davis .....1.40@1.50

Dried Fruits

Evap. Apples, fancy, per lb 9
Apricots 18
Peaches 15
Pears .. ..12@13
Prunes, fy, ...5@8

Beans, Dried

Limas, No. 1, per cwt 5.00
Pink No. 1 .. ..2.75
Lady Washington .....2.90@3.00
Small White ....3.25@3.40
Black Eyes .....4.50@5.00
Garvanzas .. ..4.25@4.50

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb. cans, lb. 7½@8
Extracted, white 7½
Light Amber 7
Comb, water white, 1-lb fms.....16
Light Amber 14
Beeswax 25

Nuts

Almonds, new, per lb.....19@20
Peanuts, Virginia 7
Peanuts, California 6½
Walnuts, No. 1, S. S. .....14@15

Hay

Barley, No 1 .....15.50@16.00
Barley, No 2 .....11.00@12.00
Alfalfa, Local, per ton .....14.00@16.00
Plain Oat Hay, No. 1.....18.00@20.00
Plain Oat Hay No. 2. .....9.00@15.00
Wheat No. 1 .....14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, No. 1, per cwt.....1.40
Barley (to producer).....1.00@1.05
Rolled Barley 1.30
Corn, per cwt.....1.40
Cracked Corn 1.45
Feed Corn Meal 1.45
Shorts 1.45
Bran 1.30
Oil Cake Meal 2.75
Cocoanut Meal 1.50

San Francisco Markets

SAN FRANCISCO, Feb. 19, 1907.

Butter.

California, ex. per lb 32
California, firsts 31
California, seconds 29
Packing Stock, ...21

Cheese

New California, fancy 14
Cal. Young American, fancy.....15

Eggs and Poultry

Fresh Ranch Eggs 22
Eggs, first, per doz 20
Hens, per doz., small .....5.00@5.50
Hens, large ....600@7.50
Young Roosters, large .....6.00@8.00
Young Roosters, small .....4.50@5.50
Old Roosters, per doz .....4.00@5.00
Fryers, per doz .....5.50@6.00
Broilers, per doz. .....3.00@4.00
Ducks, young .....6.00@8.00
Geese; per pair .....2.00@3.00
Turkeys, per lb .....19@22

Live Stock

Steers, No. 1 .....8@8½
No. 1 Cows and Heifers .....6@6½
Hogs, 80 to 130 lbs. .....7½@8
Hogs, 250 to 350 lbs. 8
Calves, per lb .....5@5½
Lambs, yearlings .....6½@7

Potatoes

Oregon Burbank .....1.45@1.75
Salinas Burbanks, ctl .....1.50@2.00
Rivers .....1.50@1.65
Sweet Potatoes, ctl .....2.75@3.00

Vegetables

Cucumbers, per doz. .....1.00@1.25
Chili Peppers, Green lb .....8@12
Egg plant per box .....3.00@3.50
Green Peas, per lb .....10@15
Summer Squash, large crate ..1.50@1.75
Onions, Red, per sack ..... 1.00@1.25
Onions, Yellow ..... 1.00@1.25
Peppers, Green, Bell .....40@75
Rhubarb, per lb .....7@10
Summer Squash, large crate 2.00
String beans .....15@17
Tomatoes ....1.50@2.25
Wax Beans .....15@17

Citrus Fruits

Lemons ....75@2.50
Sweets .....3.25@3.50
Navels ....1.50@2.75
Seedlings .....2.50@3.00
Grapefruit .....2.00@3.50
Limes .....3.50@4.00

Fresh Fruits

Apples, fancy, per box .....1.25@2.50
Apples, common, per box.....75@1.00
Pears, ...1.00@1.50
Prunes, per box .....60@85

Dried Fruits

Apples (evap.) .....7@8
Apricots, per lb .....16@20
Figs, white .....2½@4
Muscatels (loose) .....7@8
Prunes .....2@2½
Peaches .....10@12½
Raisins, seeded (1906) .....8½@10
Thompson, unbleached 7½
Thompson, bleached .....9@11

Beans and Seeds

Limas, No. 1 .....4.25@4.40
Pink ....1.95@2.10
Large White .....2.25@2.50
Small White ....2.80@2.95
Black Eyes .....4.50@4.65
Red Kidneys .....3.40@3.75
Bayo .....2.00@2.30

Hops

1906 Crop (future lb.) .....10@12½

Nuts

Almonds new 17½
Peanuts, Viginia 6½
Peanuts, California .....5½@6
Walnuts .....15@16

Honey

Clear White Comb 16½
Amber .....14@15
Extracted .....5½@6

Hay

Alfalfa, local	10.00@13.00
Oat	15.00@18.00
Wheat No. 1	19.00@22.00
Wheat, No. 2	13.00@16.00

Grain

Wheat No. 1	1.27@1.28
Barley No. 1	1.12@1.15
Corn, small yellow	1.50@1.55
Corn, yellow	1.27@1.30
Oats. White	1.45@1.55
Oats, Red	1.30@1.75
Ground Barley, per ton	24.00@25.00
Bran, per ton	20.00@22.00
Straw, per bale	60@80
Feed Corn Meal, per ton	32.00
Cracked Corn per ton	32.00
Oil Cake Meal, per ton	38.00
Cocoanut Meal, per ton	25.50
Calaifa Meal, per ton	21.00
Mealfalfa, per ton	21.00

Citrus Market

New York Market.

NEW YORK. Feb. 19,—There has been a big improvement in conditions during the past week in the Middle West, and oranges are selling fully 25 cents per box higher. As an illustration, cars standing on the the tracks at Chicago last week drew offers of $2.50, with a discount for large sizes, and this week the same cars have been sold at $2.75 straight. Inquiry is stronger than it has been at any time this season, with considerable f. o. b. selling at $1.65 to $1.85 for extra choice. The country is beginning to wake up. Many small interior towns that have been doing nothing for the past six weeks are asking for oranges at the present time.

There should be a good advance again next week. The auctions still show low prices, owing to the fact that there are a good many cars of undesirable stock and off sizes that are cleaning up in those markets, and there is no question but conditions will materially improve. Oranges are holding up splendidly, with very little sign of puff; there is no dropping whatever, and everything is very encouraging.

In New York city and the Atlantic coast the extreme cold weather is depressing the market, and until such time as the weather is more favorable no material improvement can be looked for. Sizes 176s and smaller are in very light receipt and are generally selling to good advantage, but 64s to 126s are too plentiful, and this, together with the zero weather, has had a depressing effect. Fruit stand and push cart peddlers cannot operate favorably under conditions at present existing.

Just at the present time apples, cheap apples have been looming up as a rival to the orange. It has been customary for the Eastern buyer to bring out the bogy of cheap apples to bear the price of oranges. The bogy did not scare the orange men this year and they have held stiffly to what they thought was the price they should get for their product and now we learn that good apples are scarce and that prices are going up.

Florida appears to be down and out, as orders are coming in for Californias from other districts that handle Floridas altogether when they can get them. A healthy sign is the increasing number of cash orders, one dealer purchasing 35 cars during the past ten days.

There has been an eager demand for first-class California lemons for the past ten days. Prices are the highest for any February in the history of the business. There is already an active inquiry as to the possibility of supply future orders, and if the California lemon shipper could only assure the eastern dealer that his market would be supplied regularly he would need have no further feats of competition in that market from outside sources.

At a foreign lemon sale in New York City Friday of this week, 16,000 boxes were sold at prices ranging from $2.40 to $3.00. The sale was spirited and the buying was mostly for out-of-town accounts. A decided preference was shown for 300s. On the same day California lemons sold at from 25 cents to 50 cents per box higher. The f. o. b. prices for our lemons range from $2.00 to $2.65.

There is much in the present situation to encourage the grower and shipper of citrus fruits. The situation has been tense for some time, but the interested ones have held for fair prices and thought there has been much suspicion everywhere that the break would come, and many other causes to worry them, they are now in a position where they can breathe easier and view the future with more confidence. Shipments are not more than the markets can stand, old fruit is out of the way, the worst of the winter cold is practically over. Floridas are out of it, and orders are coming in. Educate the people to want large sizes and prod the railroads into activity, and the best season ever is assured.

The market today (19th) is very active and steadily advancing. Erie Railroad could not deliver several of the cars catalogued for today's sale. Weather cloudy and threatening. Sixteen cars oranges and three cars lemons sold today.

NAVELS—	Av.
Magnum Bon. fy J. A. M. Dua...	$2.45
Magnum Bon. ch J. A. M. Dua....	2.45
Magnum Bon. st J. A. M. Dua....	2.25
Whittier fy Red. Dist.....	2.70
Whittier ch Red. Dist.....	2.50
Old Mission fy C. C. Chapman....	2.45
Old Mission ch C. C. Chapman....	2.20
Golden Eagle st C. C. Chapman...	2.20
Lion Head T. I. I. L. Lyon & Sons	2.75
Tiger Head T. I. I. L. Lyon & Sons	2.50
West Highlands fy High. Dist....	2.45
West Highlands ch High. Dist...	2.30
B. Keystone fy King Ft. Co.....	2.20
R. Keystone ch King Ft. Co.....	2.15
Rossmoyne or, E. M. Ross.....	2.20
Standard st E. M. Ross.....	2.30
Columbia T. I. National O. Co.....	2.70
Standard st National O. Co.....	2.55
Redlands best Bryn Mawr.....	2.20
Highland	2.35
Blossom xch Redlands M. O. Co..	2.20
Mountain Lion F. H. Speich & Co.	2.15
Blue Globe T. I. Riv. Ft. Ex.....	2.85
Blue Globe xfy Riv. Ft. Ex.....	2.65
Squirrel fy A. H. Ft. Ex.....	2.45
Setter ch A. H. Ft. Ex.....	2.45
Magnolia xfy Worthley & Strong..	2.85
Peacock xch Worthley & Strong...	2.35
Moreno Worthley & Strong.....	2.40
Peacock xch Worthley & Strong...	2.15
Badger xfy Cal. C. U.....	2.75
Washington	2.40
Blue Flag xfy Spence Ft. Co.....	2.15
Mocker or, Spence Ft. Co.....	2.00

LEMONS—	Av.
Canna xch Santa Barbara Ex....	3.70
Plain End Santa Barbara Ex.....	3.00
Marguerite xch Cal C. U.....	2.15
Independent fy Highland Dist....	3.30
Independent ch Highland Dist.....	2.55
Squirrel fy A. H. Ft. Ex.....	3.80
Magnolia xfy Worthley & Sons....	2.10
Standard	1.80
Slover Mountain Colton Dist.....	2.75

TANGERINE HALVES—	Av.
Victoria xfy A. H. Ft. Ex.....	2.35
Native Son st King Ft. Co.....	1.95
Badger xfy Cal. C. U.....	1.60

NAVELENCIAS—	Av.
La Loma fy Highgrove Dist.....	2.60.

Feb. 18.—The market is very active. The weather is cool and clear. Twenty-eight cars oranges and three cars lemons sold.

NAVELS—	Av.
Gavilon fy F. H. Speich & Co...	$2.25
Golden Flower Reds. O. G. A.....	2.20
Golden Gate xch Reds. O. G. A.....	2.05
La Mesa xfy R. Ex. Riverside....	2.55
Golden Rule xch R. Ex. Riverside..	2.40
Stag T. I. A. C. G. Ft. Ex.....	2.75
Pointer T. I. Q. C. G. Ft. Ex.....	2.45
Stag xfy Q. C. G. Ft. Ex.....	2.30
Iris xfy D. M. Ft. Ex.....	2.35
Pointer xch A. C. G. Ft. Ex.....	2.05
Hunter st A. C. G. Ft. Ex.....	2.35
Carmencita xch S. T. Ft. Ex....	2.10.
Colombo st S. T. Ft. Ex.....	2.10
Violet ch D. M. Ex. Duarte.....	2.30
Moore Estate xch Moore Es. Ex...	1.80
H. M. Brand.....	2.60
Liberty Bell xch Cal C. U.....	2.05
Bison st Cal. C. U.....	1.95
Liberty Bell xch Cal. C. U.....	1.65
Dragon st Cal. C. U.....	1.50
Criterion or, Penn Ft. Co.....	2.30
Old Mission fy Chapman's Fulln...	2.25
Old Mission ch Chapman's Fulln...	2.20
Golden Eagle st Chapman's Fulln..	2.25
Mt. Harrison fy F. L. Sewell High..	2.60
Mt. Harrison xc F. L. Sewell High.	2.50
W. Highlands or High. Dist.....	2.35
W. Highlands ch High. Dist.....	2.25
Gypsy Queen xfy Moulton & Gr...	2.75
Carnation xch Moulton & Gr.....	2.70
Tropical Q. st Moulton & Gr.....	2.10
Alpha xfy Riverside Ft. Co.....	2.70
Elk xch Riverside Ft. Co.....	2.50
Lion H. T. I. I. L. Lyon & Sons....	2.70
Tiger H. T. I. I. L. Lyon & Sons....	2.40
Lion H. xfy I. L. Lyon & Sons....	2.65
Tiger H. xch I. L. Lyon & Sons...	2.40
Rossmoyne T. I. E. M. Ross.....	2.20
Standard R. I. E. M. Ross.....	2.15
Whittier fy Red. Junc. Dist.....	2.55
Whittier ch Red. Junc. Dist.....	2.30
Old Mission fy Chapman's Fulln...	2.35
Golden Eagle st Chapman's Fulln..	2.10
Old Mission ch Chapman's Fulln..	2.20
Honest Pack fy Tustin Pack. Co...	2.30
Old Oak ch Tustin Pack Co.....	2.30
Canoe st Tustin Pack. Co.....	2.05
Orchard or National O. Co.....	2.65
Standard st National O. Co.....	2.35
Columbia T. I. National O. C.....	2.70
Standard T. I. National O. Co.....	2.55
Rose T. I. Red. O. G. A.....	2.60
Clover T. I. Red. O. G. A.....	2.45
Lily fy Cal. C. U.....	2.70
H. M. Brand	2.50

LEMONS—	Av.
Canna xch S. B. Ft. Ex.....	$3.55
Peerless or San Diego Ft. Co.....	2.15
Corwin's xfy W. S. Corwin.....	3.00
Plain Eend st S. B. Ft. Ex.....	2.95
Corwin's ch W. S. Corwin.....	2.75

Boston Market.

February 18.—The market is advancing. It is snowing. Thirty-five cars oranges and lemons sold today. Fourteen cars on tracks.

NAVELS—	Av.
Alpha, ex fy Riverside Ft Co.	$2.70
Elk, ex ch Riverside Ft Co.	2.50
Alpha, ex ch Riverside Ft Co.	2.35
Elk, ex ch Riverside Ft Co.	2.15
Lion Head ex fy I L Lyons & Son	2.60
Golden Flower Redlands O G A ..	2.50
Camellia ex fy Redlands M O Co..	2.45
Blossom, ex ch Redlands M O Co ..	2.30
Laverne Beauts Laverne Cit. Assn.	2.25
Laverne Grove Laverne Cit. Assn	2.15
California Orange Riv. Hts O G A	1.65
I. X. L. ex ch Benchley Ft Co	1.75
Buena, st Benchley Ft. Co	1.60
Queen Bee ex ch Q C Ex Corona ..	2.50
Royal ex ch Q C Ex " " "	2.35
La Mesa, ex fy Riverside Ft Ex	2.55
Golden Rule, ex ch Riverside Ft Ex	2.35
Stag ex fy A C G Charter Oak	2.30
Pointer, ex ch A C G Charter Oak	2.25
Orchard o r National Orange Co ..	2.65
Standard st National Orange Co ..	2.45
Rose ex fy Redlands O G A	2.55
Clover, ex ch Redlands O G A	2.50
Highlander ex fy Highland F G A	2.50
Cactus ex ch Highland F G A	2.50
Criterion o r Penn Ft Co	2.30
Wolf st Penn Ft Co	2.05
W Highlands fy Highland Dist	2.25
W Highlands ch Highland Dist	2.15
Liberty Bell ex ch C C U	1.90
Not Named o r Skinner	2.20
Alhambra, ex ch S T Ex Alhambra	2.15
Royal Knight ex fy R H Ex Reds.	2.65
Royal Knight ex fy R H Ex Reds	2.55
Cosmos fy S B Ex Yerkes	2.30
Cosmos T I S B Ex Yerkes	2.50
Quail ex ch O K Ex Upland	2.35
Golden Rule ex ch R I C., Riversd.	2.55

MANDERINES—	Av.
Bear, ex fy O K Ex Upland	$2.50
Quail ex fy O K Ex Upland	2.25

Cincinnati Market.

February 18.—Market steady; weather favorable. Six cars on tracks.

NAVELS—	Av.
Queen Bee ex fy Q C Ex Corona	$2.40
Royal, ex ch Q C Ex Corona	2.35
Coyote, ch O K Ex Ontario	2.40
Blue Jay st O K Ex Ontario	1.90
Parrot ex ch S A Ex Pomona	1.95
Hawk st S A Ex Pomona	2.00
Cactus ex ch Highland F G A	2.40
La Belle st Highland F G A	2.30

LEMONS—	Av.
La Belle st Highland F G A	$3.15

Pittsburg Market.

February 18.—The market is very strong and the weather is favorable. Fifteen cars oranges and two cars lemons sold.

NAVELS—	Av.
Buckeye, ch Ohio Lemon Co	$1.00
Crackshot fy Sparr Ft Co	1.00
Crackshot fy Sparr Ft Co.	1.40
Orangevale	2.65
Poinsettia fy, C C U	2.45
Triumph C C U	2.55
Excelsior ch C C U	2.50
La Mesa ex fy Riverside Ex	2.45
Golden Rule ex ch Riverside Ex	2.35
Golden st Riverside Ex Riv.	2.00
Violet ch D M Ex Duarte	2.05
Stag ex ch A C G Ex Azusa	2.20
Pointer, ex ch A C G Ex Azusa ..	2.45
Laverne Home Laverne Cit Assn ..	1.70
Orchard o r National Orange Co ..	2.60
Standard st " " " "	2.25
Cream ex fy Stranchan Ft Co	2.10
Aster o r Stranchan Ft Co	2.20
Triangle ex fy Stranchan Ft Co ..	2.60
Pyramid o r Stranchan Ft Co	2.40
Uuncle Sam ex fy Riverside Ex	2.35
Standard st, Riverside Ex	2.30
Fiesta, ex ch Riverside Ex	2.35
Cougar ch Covina Ex Covina	2.10
Pointer ex ch A C G Lateen Spur ..	2.05
Pointer ex ch A C G Lateen Spur .	1.95
Pyramid, o r Stranchan Ft Co	3.00

LEMONS—	Av.
El Modeno st, S S Ex El Mod. ..	$2.50

Philadelphia Market.

February 18.—The market is steady and the weather cold. Seven navels and one lemon sold. Five hundred cases Valencia oranges, 12 cars Floridas and 300 barrels Jamaicas sold today.

NAVELS—	Av.
Magic Isle T I Stranchan Ft Co	2.15
Don ch Stranchan Ft Co	2.05
San Rafael	2.25
Highland ex fy S B Exchange	2.60
Stag, ex fy A C G Ex	2.50
Pointer ex ch A C G Exchange	1.90
Peyton Val. Peyton	2.05
Golden Beauty cartoons)	2.30
Golden Beauty (boxes)	2.25
Tally Ho ch S B Ex Rialto	2.15
Yacht st S B Ex Rialto	1.90

LEMONS —	Av.
Visalia fy T C Ex Lemon Cove	$3.15
Lemon Cove ch T C Ex	3.00

Cleveland Market.

February 18.—The market is steady and weather favorable. Eight cars sold.

NAVELS—	Av.
Homer Q C Ex Corona	$2.40
Camel Q C Ex Corona	2.20
Family Q C Ex Corona	2.05
Red Glode ex fy Riverside Ex.	2.10
California Orange st Riverside Ex	2.00
Alhambra ex ch S T Exchange....	2.15
Gavilon fy F H Speich & Co	2.40
East Highlands ex fy East H C A.	2.40
Knight fy Ely-Gillmore	2.00
Carmencita ex ch S T Ex	2.25
Colombo st S T Ex	2.15
La Belle st, Redlands M O G	2.55

LEMONS—	Av.
Young America P & Mc K	$2.60
Camellia Reds M O G	2.90.

St. Louis Market.

February 18.—The market is weak on navels and very strong on lemons. Weather favorable. Five cars sold and eight on tracks.

NAVELS—	Av.
Lochinvar ex ch R H E Highlds ..	$2.35
Belt st R H " " " "	2.20
Yule Tide, fy Red M O Co	2.40
Stag ex fy A C G Exchange	2.35
Pointer ex ch A C G Exchange	2.10
Liberty Bell ex ch C C U	2.00
Arbutus ch C C U	2.00

LEMONS—	Av.
Justrite Q C Exchange	$3.20
Rosa Villa Q C Exchange	2.75
Minerva Q C Ex	3.05

CITRUS FRUIT SHIPMENTS.

LOS ANGELES, Feb, 19.—Shipments for February 18 were: 98 carloads of oranges, 11 carloads of lemons.

Total to date this season, 6657 cars of which 825 cars are lemons.

Total to same date last season, 7913 cars of which 956 were lemons.

Fit a Round Peg in a Round Hole

Yes we meant every word that we said last week about the failure in poultry is largely at the start. First get good eggs from well nourished, properly fed hens. Then feed your young chicks on A. C. W. Chick Food and you will succeed in raising fine strong birds. No one would feed an infant 6 weeks old soda crackers or second-hand bread crusts. Don't feed your infant chicks improper food either. A. C. W. is made specially for infant chicks and infant digestions.

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Excelsior chick food is a perfectly balanced ration for your growing chicks. Will raise the largest possible per cent. of your baby chicks. All pure food, no shriveled grain and filler used in its manufacture. Absolutely clean and free from dust. No waste.

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Better Than an Orange Grove

For quick returns, a few acres in Gum Trees will grow into actual dollars with a bigger percentage of profit than any deciduous-fruit-producing trees. We have a small quantity of seeds of the new variety Sugar Gum—Eucalyptus Corynocalyx—taken from extra fine specimens of trees grown near Claremont, Los Angeles County. This variety is highly ornamental, rapid growing—and of high commercial value—its timber being very durable both above and under ground.

Price per oz. $.75; per lb. $7.00. Send orders to

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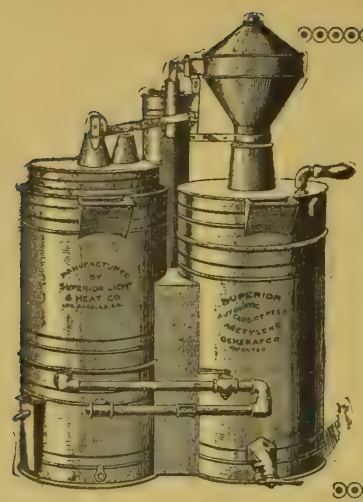

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We want to know all people who are still clinging to the old style oil lamp. We have many things of interest to tell and this information is ***free.***

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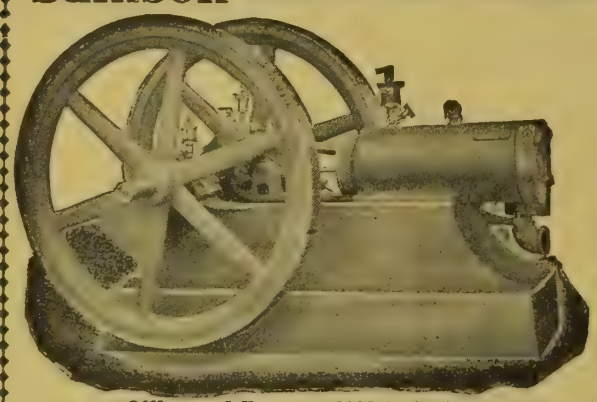

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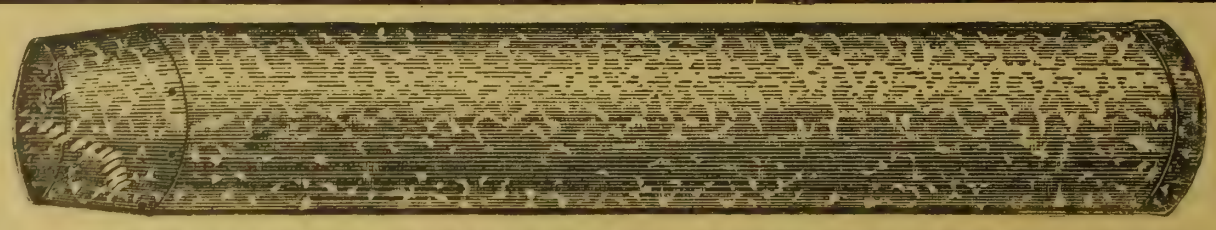

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Irrigation and Pumping

WATERS OF THE SAN JOAQUIN.

IN THE investigation of the underground waters of the San Joaquin Valley which the United States Geological Survey has been pushing vigorously during the last season many perplexing problems are arising to the solution of which the geologist in charge of the work is devoting much energy.

Minor geological structures about the borders of the valley, buried saline deposits which seriously affect the quality of the waters, changes in ground water level resulting from over-irrigation and the consequent deterioration of lands through the accumulation of alkalies at the surface are questions which, with many others, are being studied in order that the final report on the work may have the greatest practical value to present and prospective settlers.

Conditions near the northern and at the west side of the valley are particularly unsatisfactory from the water users' point of view. West side ground waters are generally poor in quality and beneath the more valuable lands they lie at considerable depth. Two possible remedies have been suggested—one is the development of ground waters at a point pretty well south in the valley where good waters may be obtained as artisian flows, or as ground waters that may be pumped with comparatively small lift, the waters thus developed to be delivered to a canal and carried to some of the lands in the vicinity of Crow's Landing or further north, which are at present without gravity waters.

The other way contemplates the lifting of water from the San Joaquin by some effective pumping device and delivering it by a similar canal. Conditions along the east slope of the valley intermediate between its axis and its eastern edge emphasize the need of light on alkali problem in the valley. In this area alkalies are rising as the result of irrigation and lands originally valuable are becoming useless. Plans are now being made for a thorough investigation of these conditions.

Philanthropist—"But why don't you get a hand-organ and go round and try and earn some money?"

Tramp—"No, that would be too much of a grind."

When writing advertisers mention Cultivator

RECLAMATION OF ARID LANDS.

In a letter to the National Irrigation Congress, which met in Boise, Idaho recently, President Roosevelt summarised the work that has been undertaken under the Reclamation Act passed about four years ago. The President wrote:

"Already the government has made a thorough survey of 10,000 square miles of desert land, and plans have been adopted for placing nearly one-sixth of it (1,000,000 acres) under irrigation. At present 200,000 acres are provided with ditches and not less than 10,000 men are employed in the twenty-three large enterprises which have been begun. The amount of money which has thus far been devoted to the work is $40,000,000. As most of the readers of "The Farmer" will remember, this is not taken from the taxpayers' pockets by Congressional appropriation, but is derived from the sale of public lands. Eventually, the government expects it will be recovered from similar sales in the different regions that are benefited by the improvement, and will be used over and over again for the same beneficent service."

One of the most perplexing questions which the administration is trying to solve is how to secure the advantages of irrigation to the largest number of settlers in a given area. In Mr. Roosevelt's opinion a farm of 160 acres is much too large for the average tiller of the soil. He does not believe that any one can do justice to more than forty acres, and in some localities, in his jubgment, five would be a liberal allowance. Only a moment's figuring shows that a million acres would funish only 6,250 farms, each embracing a "quarter section," whereas if the average size were not greater than twenty acres, fully 50,000 farms would be available. Manifestly, the man who, with a secret purpose of speculating in land, applies for 100 acres, discourages settlement by others near him and interferes with the development and prosperity of the country, but it is far from easy to discourage such persons. It would be a boon to the states in which this work is in progress and to the individual settlers if a way could be found to convince the latter that a small farm would be more useful to him than a big one.

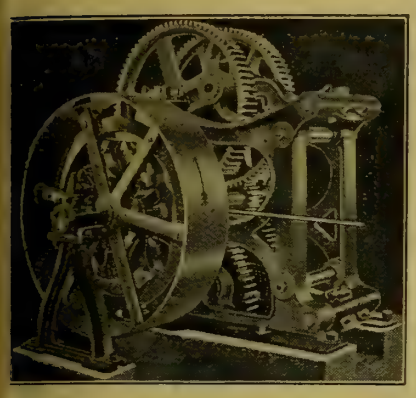
Making a perceptible addition to the arable area of the United States is, of course, a service to agriculture, though the labor is performed under the direction of the geological survey, and hence under the auspices of the Interior Department. The sum which is devoted to this improvement may seem large in comparison with that which is spent in the interest of commerce on rivers and harbors—less than $20,000,000 a year on the average for the last three years. Reclaiming arid land, however, is much the cheaper, because the government merely lends the money which is used for that purpose, whereas the appropriations for river and harbor improvements are permanently invested.

Scott—Many a man who sees a mote in his neighbor's eye has a beam in his own.

Mott—That's natural. It makes a man's whole face beam to discover something wrong about his neighbor.

The Pomona Pumps

Are Best



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Using machine cut and slow running ears, they are

PERFECTLY NOISELESS.

They use stepped gearing with no reak in the tooth contact, doing away ith all rattle and vibration.

ECAUSE—

They have an ideal motion of the ump rods, which consists of a uniform ontinuous slow up motion, a smooth, uick down movement with absolute- no jerk in starting the rods upward liminating all rod breakages and alve troubles.

ECAUSE—

They will save you money in cost or power. We use machine cut gear- g which alone saves ten per cent. Ve have a leverage in our gearing hich other pump makers do not ave and which they do not tell you bout when trying to down us.

ECAUSE—

In pumping through long pipe lines, hey deliver a continuous steady tream.

They do not hammer out your pipe ne by irregular pulsations of the ater column.

They save power by keeping the ater in continuous motion.

ECAUSE—

They are fitted with improved oil- g devices that can be filled without topping. Pumps may run for weeks ontinuously.

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We have advantages in our pumps hat investigators appreciate at once, onsequently, where one goes others ollow and we are fast taking the ountry.

ECAUSE—

We give a guarantee of satisfaction ith every plant.

Send for catalog.

Pomona Manufacturing Company

Makers

Pomona, California

The desert is disappearing; the Oregon trail is gone. Above them are fields of golden grain and railroads traverse the fertile stretches. Ask a settler for the story and he can tell it in few words. Idaho is the child of irrigation.

In no other section of the barren West is the progress of reclamation more effectively illustrated than in this state. At the recent gathering of the delegates to the National Irrigation congress in Boise the development of the reclamation service was presented in detail. It was shown that in 1870 there were 414 farms in the newly settled territory of Idaho. That by means of crude irrigation the aggregate number of farms in 1900 had increased to more than 17,000. Today in this state are anproximately 1,353,000 acres of irrigated lands under cultivation, with a total of over 4,000,000 acres under irrigation canals awaiting the settler.

These lands produce wonderful crops. The results of irrigation are emphasized near Boise. A highway skirts the foothills west of the town. To the right of this highway are slopes of arid waste lands on which grow nothing except the dull and gray sage brush of the desert. To the left are fruit orchards, fields of clover and alfalfa, berry patches and pastures lined with sunflowers. The peaches from these orchards are very large. The most choice are shipped to New York where they are served in the high-priced cafes at twenty-five and thirty cents each. The prunes are as large and well flavored as those in California.

The desert lands of Idaho are being reclaimed by means of three agencies: By association of land owners; by the state under the provisions of what is known as the "Carey act," and under the provisions of the reclamation law enacted by Congress in 1902. All of these plans have the same end in view, the ownership by the land owners of the canal systems from which they take water. Through private enterpises projects for the reclamation of nearly 800,000 acres have been completed. Under the Carey act nearly one-half million acres are in process of reclamation.

The government projects now under construction will reclaim about 1,100,000 out of a total area of about two and a half million acres, which will be irrigated and made producing lands within the next few years. With the exception of about 1,800 square miles in the extreme southeastern corner of Idaho all the lands in this state are embraced in the Columbia river drainage, of which 84,000 square miles—the valley of the Snake river—is included in Idaho. The normal flow of the Snake river and its tributaries is practically appreciated by the calans now in operation and those under construction. The plans of the government provides for storage reservoirs in the head waters where the flood will be conserved and utilized during the seasons of minimum flow.

NATIONAL IRRIGATION CONGRESS.

It is announced by the officials of the National Irrigation Congress and of the California State Fair, that the dates of these two events have been fixed to cover the first two weeks of September, and that an Inter-state Exposition of irrigated-lands products on a large scale will be held, commencing with the opening of the Irrigation Congress on Monday, September 2d, and continuing until the close of the State Fair, Saturday, September 14th.

This will have the effect of making the California State Fair an Interstate Fair, so far as agricultural products are concerned, and it is altogether probable that the live stock feature, too, will be made to include all the Western States. "The California State Fair, Inter-state Irrigated-lands' Products Exposition and Western Stock Show," is the name that has been suggested for the big event, which will eclipse any similar effort ever made in this State, with the single exception of the Midwinter Fair, held in San Francisco several years ago.

Under the plans tentatively agreed upon, the details of the Interstate Exposition will be handled by the Sate Agricultural Society. The Board of Control of the Irrigation Congress will, of course, take an active interest in it, and will offer handsome prizes for Intersate exhibitors, in addition to those offered by the State Agricultural Society. A number of cups and other trophies well worthy of interstate competition will be among the prizes offered, and it is expected that competition for these will be open to all other States, but not to California, as a second set of trophies and prizes will be offered for Sate Fair exhibitors. In the Interstate Exposition this State will act as host to visting States and visiting exhibitors of irrigated-land products, and will hang up prizes for which her guests will compete.

The proposed exposition has been fully discussed between the members of the Board of Control of the Irrigation Congress and Mr. J. A. Filcher, Secretary of the State Agricultural Society, and the plans are practically detremined, subject to the approval of the Directors of the State Agricultural Society at the next regular meeting, to be held in this city February 24th.

Details for the big event are still to be betermined, but it is probable that the Interstate Dry Lands Exposition will open Monday, September 2d, and that an effort will be made to have the agricultural and horticultural exhibits of the California State Fair in place also by that time. The Irrigation Congress will be scheduled to meet on the 2nd, but the proceedings of the session will probably be deferred until Tuesday the 3rd. Saturday, the closing day of the Irrigation Congress and the opening day of the State Fair will be marked by some kind of a grand demonstration, including a parade that will eclipse any previous affair of the kind.

The Board of Control of the Fifteenth National Irrigation Congress will undertake to expend $50,000 providing for and entertianing the Congress. Two weeks of enjoyment will be provided, and visitors will be given the time of their lives. The days of the session will be quiet, in order that the attention of the delegates may not be distracted from the main purpose of the Congress, but other days will be full of live program. Anticipating a desire on the part of visitors from other States to see as much as possible of California, a series of excursions will be arranged for their benefit. These will be run through the Sacramento and San Joaquin Valleys, and possibly as far as the Klamath project on the north, the Truckee-Carson project on the east and the Yuma project on the south.

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You can't get a poor lamp chimney with my name on it.

MACBETH lamp-chimneys fit, don't break from heat, and are so shaped that they get the most light from the oil consumed.

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My Index is free.

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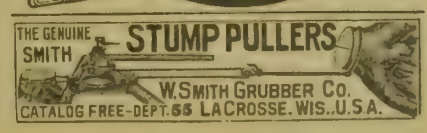

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no matter how stout your beard, if you have the right Shaving Soap, the kind which thoroughly softens the beard and makes easy work for the razor. Williams' Shaving Soap not only does this but has a healing, soothing effect on the face.

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SCHOOL SHOES

for boys and girls. They are made of the best seasoned upper leather and tough solid soles and have fewer seams than other shoes.

Mayer School shoes are shaped to prevent injury to growing children's feet. They

WEAR LIKE IRON

Your dealer has them or will get them for you—take no other. The Mayer trade-mark is stamped on every sole.

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F. Mayer Boot & Shoe Co.
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He need not first behold the day
  In Georgia or in Maine,
Amoung New England's snowy hills
  Or Dixie's sugar cane,
To be the noblest of his kind
  Since first the world began,
The best beloved of freedom's sons—
  A true American.

The Norseman with his viking blood
  And locks of yellow gold,
The German feeling in his breast
  A knightly courage bold,
The lad of England's dewy lanes
  Or Scotland's ancient clan,
Each rallies to the stars and stripes—
  A true American.

It matters not the spot of earth
  That claimed him at his birth;
The open hand, the royal heart,
  The soul of honest worth,
The love of right and liberty,
  The life that all may scan—
These are signs by which we know
  The true American.

—MINNA IRVING.

A MARINE WANDERING JEW.

SINCE steam has largely taken the place of sail on the ocean I doubt if the sailor's yarn is what it was fifty years ago when the Black Ball line of clipper ships sped between the occident and the orient. In my younger days—I was but a lad—I sailed before the mast in the Breadnaught. Among our crew was Seth Hawkins, an old salt of forty. We considered him a Methuselah, a tall, thin man with a profusion of little red curls.. He was very religious, observing all the commandments scrupulously except the ninth, "Thou shalt not bear false witness," and in this he sinned only in spinning yarns, which he always vowed were real happenings. One starlight night on the forecastle while we were lounging about the capstan be gave us the following:

"You've all heard a lot about Judas Iscariot, who was cursed with havin' to live forever and wanderin' all over the world, at one time bein' seen in Egypt, another in France, and so on, always leavin' a trail of misfortune in his wake. But I don't believe any of you has ever hearn about his sailin' the seas. There's no sense in this, for how could he have got to Ameica where he's turned up often, unless he crossed an ocean? Leastways I've seen him myself, and on the water too.

"I first shipped on the Mark Matthews on a voyage around the Horn to take in hides on the west coast of South America. We was layin' in the doldrums one evening just before four bells. A thick fog was all about us, and we couldn't see a cable length. All of a suddent I heered a bell. It struck four times. As soon as it stopped our bell struck too. Then the fog thinned a little, and just about half the ship's length from us was the oddest lookin' craft I ever clapped eyes on. She was awful high in the poop, low in the waist and had a head on her bow like that of a sea sarpent. She had two masts like a schooner, and the sails was hung on 'em like they put 'em on Chinese junks. Of course they hung limp like ourn.

"She was head-on, and the fog didn't let us see abaft the fo'mast. On the forecastle stood the figur' of an old man I couldn' tell you how old he looked, but there was somethin' about him that reminded me of a people long passed away. He was a Jew and the Jewiest lookin' Jew I ever see. He was wrapped in a cloak that looked like a monk's frock. The melancholy way he stared out o' them blinkers o' his'n was enough to send a cur yelpin' to his kennel. They was like the eyes of a sick man as hadn't slept durin' a thousand year voyage. There wasn't a bit o' color in his cheeks unless you call the leathery look o' the hides we've got below color, and it seemed as if I could see right through his gastly lips to the few teeth that was left in his jaws. He hadn't any hat on, and I wasn't near enough to see just what his hair was like, except that he had mighty little. But somethin' was a-movin' on his skull that looked like worms. Whether it was worms or hair I couldn't see, it must a' been worms, for there wasn't the ghost of a breeze to move even the finest hairs. He stood there lookin' at us without any interest in them melancholy eyes o' his'n, and the only motion he made was with his skinny hands, pourin' some silver coins from one hand to t'other. Every oncet in awhile he'd make as if to throw the silver away, but he couldn't, and every time he tried and failed his face would take on an expression of awful remorse.

"While I was lookin' at him the two ships was so slowly driftin' apart that nobody could see 'em move. The other craft was gettin' in our stern. The Jew's blinkers was movin' about, never restin' on anything for mor'n half a second till suddenly they struck our stern. Then there was the worst fright come into 'em I ever see on any man's face, not even a mutineer I once saw hung when he caught sight o' the noose danglin' from thet yardarm.

. "What did he see? Didn't I tell you our ship was the Mark Matthews? The name o' course, was on the stern. Some o' the letters was faded, and the 's' in Matthews was pretty nigh gone, What the Jew saw was the names o' two o' the apostles, Mark and Matthew.

"Then for the first time it struck me who it was. He was the wanderin' Jew. As soon as he saw the names o' them two old friends o' his'n he was throwed on his beam ends. You see he was one o' the twelve in good and regular standin' till he betrayed his master for them thirty pieces o' silver. To be brought face to face with two of the disciples after a couple o' thousand years' wanderin' must 'a' brought back unpleasant remembrances.

"By this time I felt so bad for the poor old sinner that I wanted to give him somethin' to warm him up. I ran below, got some grog in a can and ran back, expectin' to swing it over to the Jew at the end of a rope. But when I got on deck the strange lookin' craft had disappeared in the fog.

"But where she'd drifted to was a puzzler, for within ten minutes the fog lifted, we could sweep the horizon, and there wasn't a sail to be seen.

"Within an hour it come on to blow out o' the sow'west. That was the gale when I was wrecked, the Mark Matthews goin' to the bottom and the crew bein' picked up half dead by a whaler."

E. A. MITCHEL.

"My dear," said the caller, with a winning smile, "I suppose you assist your papa by entertaining the bores?"

"Yes, sir," replied the little girl gravely. "Please be seated."

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Eggs $1.50 per 15.
WHITE PLYMOUTH ROCKS
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A MENTAL HOUSECLEANING.

The first of the year is considered by the people of commerce a time for taking stock and making a clearance of a lot of odds and ends that have accumulated since the preceding January. New goods take the place of old ones, and everything useless is weeded out and disposed of to make room for spring custom. The "survival of the fittest" is the law in vogue.

This season is followed by a protracted session of housecleaning, the turning of rooms inside out that no speck of dust may sully the fair walls of our habitations. Rubbish is burned, places found for unclassified possessions, and when all is done we look with becoming pride and satisfaction on the result. A little temporary inconvenience, and the family can settle down in comfort in that cleanliness which is "akin to godliness."

But we seldom think of that mental taking stock and housecleaning which is more specifically necessary to our well being; the clearing out of the hoarded rubbish of years— prejudice, hate, envy, and a host of other evils that we do occasionally whitewash but never dislodge. We set a high value on order in the household; each picture must occupy its own place on the walls, each chair is at its proper angle, but the temple within, the house beautiful, is left to dust and disorder. The pictures are not hung, but stacked in corners where the cobwebs of memory cover them. Take them out this new year and bursh off the film of neglect. The furniture needs replenishing. Look at it. Oh, what medley of old loves, old hates, forgotten resolutions, neglected duties, rankling grudges, and the atmosphere that such unholy furnishings provide!

Let us rehabilitate our mental house, replace hatred with divine forgiveness, estrangements with reconciliation. Make a place for visiting angels, and no longer need the apology that we have been too busy with the house of wood to attend to the house of the soul.—[Rural Magazine.

WOMEN'S CLUBS.

The following is an extract from an article by Kate Upson Clark, which is of interest to women who wish to make the most of life for themselves, family, and friends:

"The clubwoman has learned that the care of her home is not the end and objcet of her existence; that a house is merely the chief tool in the making of a home. In order to give the highest atmosphere to her home, she must make herself as bright and beautiful and interesting and rational as possible. She must go abroad and meet her friends, those who are in circumstances similar to her own, and sharpen her wits upon theirs. She can do her full duty to her home, not by sinking entirely her own personality, but by strengthening and ennobling that personality, so that she may better impress her own lofty ideas upon her growing family. Thus can she make her home the joy and delight to her husband and children that it ought to be. The studies and addresses enjoyed by the average club tend to broaden their minds and to teach them to measure 'small things small and large things large.' Thus is developed the important sense of proportion and comparison, a faculty most needed in the home.

"The actual range of ways and means of household and family management has been greatly increased by club researches. Women in their clubs have come, not only to know better fellow-women, but to love them better. There has been developed a wonderful comradeship, such as has never been seen before. This has extended to men. As the interests of women have gone out to education, art, and science, they have met men on a dieffrent footing. Sex has been more forgotten in the realization of a noble companionship and mutual helpfulness in furthering the great common objects of humanity. The clubs have been the great idealmakers for our women. Amid all the snobbishness, the shallowness, and the blunders of these clubs, the ideals have been, on the whole, the highest and best. The ideal is the most important element in every life, especially the ideal of the home. There is nothing like getting together and comparing notes. The idea that there is only one way in which to perform household duties and family duties, and that women know this by instinct, is far from the truth. The conduct of a home, with its various departments, is fully as complicated as any other business enterprise, perhaps more complicated than any business. There is a best way of doing washing, ironing, cooking, cleaning, child-rearing, purchasing, entertaining. In the woman's club every possible phase of these subjects has been discussed to the betterment of all.

"A woman may love her children and husband to distraction, but if she has only their society from week's end to week's end, she is likely to become one of those patient, self-effacing drudges and ciphers who were the saints of a former generation. They were good, their self-abnegation was heavenly; but they were not interesting. Too often they became to their children, as they grew older, mere objects of tender compassion. 'Poor mother,' as they might have said poor Lightfoot or poor Ponto. The woman who has learned her profession in the club wants no pity from her children. She is their comrade, for she is learning how to keep her health and youth and control her nerves, and can discuss with them their studies, and help them. A powerful instrument of education, especially for the middle-aged woman, is her club."

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"Let me see, a cynic is a man who is tired of the world, is he not?" the young student of language asked. "No, no, my child," replied the knowing tutor; "a cynic is a man of whom the world is tired."

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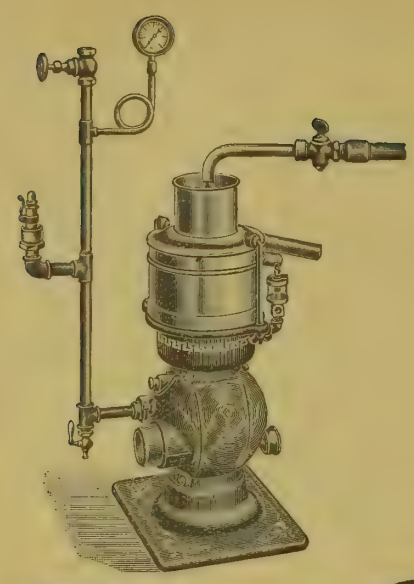

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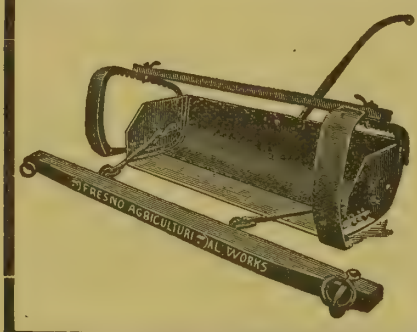

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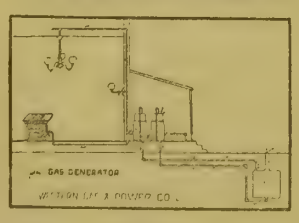

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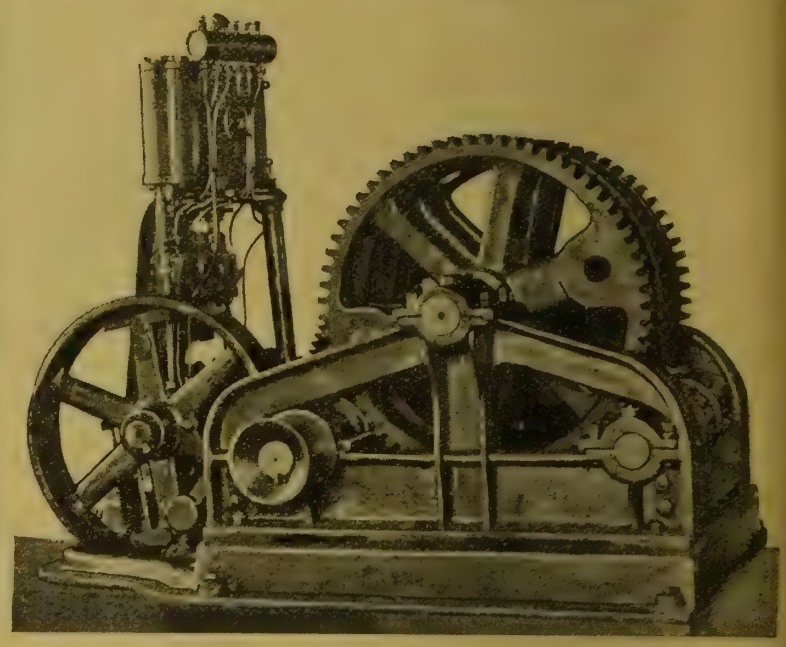

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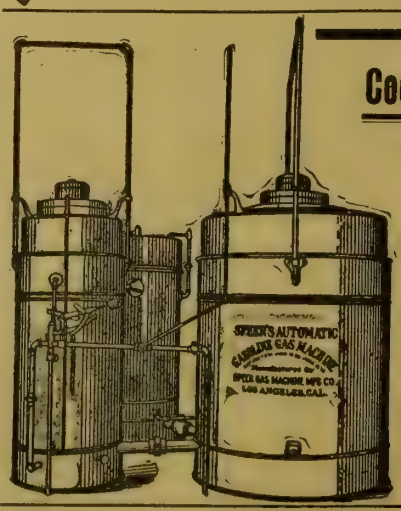

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Los Angeles February 28 1907 San Francisco

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IN its native habitat of Arizona and Northern Mexico grows the largest-growing member of the cactus family, cereus, attaining a height of sixty feet and a diameter of two or more feet. In the United States it is usually known simply as the "Giant Cactus." In Mexico they call it the "Sawuarro." In proportion to their size these Giant Cacti are among the heaviest plants known, the body being composed largely of water.

So full are they that travelers nearly perishing of thirst have saved themselves by cutting out a large piece and shaping the bottom of the wound like a basin to catch the water or sap, which collects in a considerable quantity in an incredibly short time. One would scarcely seek to quench his thirst in this manner except in cases of dire necessity for the sap is not of a pleasant taste.

The flowers, usually white or tinged with blue, are borne in a circle of clusters near the top of the plant, giving the effect of its being crowned with a wreath of white. These blossoms are followed by red edible fruits quite like a fig or pear in shape.

The native Indians make it a point to gather these fruits for food and manufacture from them an intoxicating beverage. To obtain these fruits the Indians push them off one at a time, using a long pole, which is sometimes obtained from a dead trunk of one of these giants, for when dry the body splits up into thin strips the extreme length of the plant. The flower of the Giant Cactus has been adopted by Arizona as the territorial emblem, and when the territory becomes a state, will doubtless still be found on their coat-of-arms.

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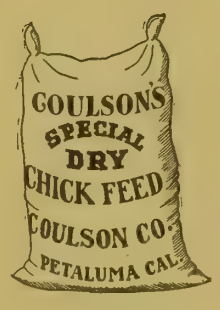

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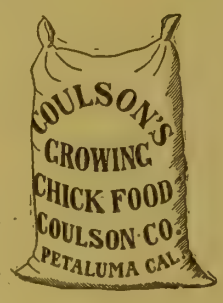

for the first six weeks or so, till they are well feathered, strong and active. Then keep up their continuous and rapid growth by feeding

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This will keep you free from the many losses resulting from improper feeding of the chicks, will bring them rapidly to maturity and will insure you a quantity of eggs in the following winter when prices are high.

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That will be sold at very *ATTRACTIVE PRICES*

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Get off at Mayflower, walk north two blocks, thence west two blocks to ranch.

California Cultivator

Vol. XXVIII—No. 9 Los Angeles, California, Thursday, February 28 1907 Subscription $1 a Year

The California Tussock Moth

An Orchard Pest for Which Hand Picking Seems to be the Only Effective Means of Extermination

By W. H. VOLCK, Entomologist for Santa Cruz and Monterey Counties

PROF. WOODWORTH says:—"It has often been remarked that when an insect like the codling-moth produces considerable injury, orchardists are very prone to class all manner of injury to this fruit to this one cause. The injury done to apples and apple trees by the tussock-moth hardly resembles the work of the codling-moth in any particular, still it is very commonly so classed. The present study is the first extended account of the economics of our Western tussock-moth. This insect, which is the only representative of its family in California, differs from other caterpillars, including its nearest Eastern allies, in its remarkable tolerance of arsenical poisons."

Preliminary Studies.

The tussock-moth caterpillar affecting apple trees in the Pajaro valley was brought prominently to the attention of the Experiment Station during the first season of the codling-moth investigation in the spring and summer of 1903, and considerable attention was given to it, including certain experiments by Prof. W. T. Clarke, who was then in immediate charge of the investigation in this valley.

It was then noted that the Paris green spraying, as conducted for the control of the codling-moth, did not destroy these larvae. Prof. Clarke found that caterpillars of this species inclosed in a cage with thoroughly sprayed leaves were able to develop, going through their normal transformation to full maturity, and finally laying eggs in an apparently normal manner.

In the spring of 1904, Mr. C. H. Rodgers, the Horticultural Commissioner of Santa Cruz county, sprayed trees, using the Kedzie formula as given in Bulletin No. 155 of this Station, as a special experiment to aid us in determining its efficiency as a control for the tussock-moth. The spraying was done in a most thorough manner and frequent observations were made, as in the previous year. Some of the caterpillars were inclosed in a jar and fed on thoroughly sprayed leaves only. Neither the insects on the trees nor those inclosed in the jar seemed to be materially affected by the poison and succeeded in developing into the adult moths.

Hand Picking.

During that season the insects prospered rather better than usual and it was noted that an unusually large number of egg masses had been deposited on the trees in many of the orchards. Noting this condition and because of the failure of the spraying experiments, Mr. Rodgers advised the orchardists to rely on the older "hand-picking" method—gathering the egg masses as thoroughly as possible during the winter and destroying them.

Mr. Rodgers and one or two orchardists carried out this program, collecting large quantities of the eggs. As had been anticipated, the tussock-caterpillars became a serious pest in 1905 and wrought thousands of dollars' damages to the apple crop; but where the egg masses had been very carefully picked off the injury was not excessive, although rather too severe to be viewed with equanimity.

The serious injury wrought in orchards where the eggs had not been picked off led many more of the orchardists to apply this method thoroughly during the winter season of 1905 and 1906.

Extent of the Work.

In all there were at least fifty orchardists who went over the trees at least once, and several picked them off two or three times. Others were content to instruct the pruners to remove such of the egg masses as they could discover. In the latter part of May, 1906, we had several hundred apples of the Bellflower and Newtown Pippin varieties picked off indiscriminately in orchards where egg picking had been done thoroughly, and also in unpicked orchards near by for a check. These orchards were of course in the badly infested section, and those selected as check orchards were in each case the one most nearly comparable with the other with which it is contrasted.

The average percentage of injured apples in the egg-picked orchards was 23.5 per cent., as against 65.6 per cent. in those unpicked; or a saving, due to picking, of 42 per cent. Where a good crop is obtained, this saving means a considerable profit on the investment required to remove the eggs.

The two orchards of C. H. Rodgers were perhaps the most carefully picked of any in the valley, while adjoining orchards not egg picked lost over 50 per cent. These orchards of Mr. Rodgers average 12 per cent better than those where the picking was less thoroughly done.

Distribution.

The tussock caterpillar is very thoroughly distributed over the Pajaro valley and the adjoining hill sections. It also occurs over the greater portion of California. In the Pajaro valley, while it is to be found everywhere, it varies greatly in abundance, and during the last three seasons its worst ravages were confined to certain definite areas. In 1891 to 1892, according to Mr. A. N. Judd, in a limited area, known as the Blackburn orchard, the trees were defoliated and surrounding places were also badly infested. Something then greatly reduced the numbers of this insect until it was hardly noticed; but in 1903 they again appeared in destructive numbers in the original locality, as well as in several other areas, mostly in the older orchards, and especially near town and toward the beach. These areas are surrounded by a widening circle of less serious infestation. If the increase continues most of the lightly infested areas will be in very bad condition next season, and the general infestation much more evident.

Food Plants.

This caterpillar is commonly found on the live oak and the yellow perennial lupin (Lupinus arboreus) that grows along the beach. In the orchard it feeds on apple and cherry trees, and when very abundant is found feeding on walnut and numerous other plants; but apparently, in such cases, these insects have wandered from their original food plant.

On the lupins at the beach the egg masses do not hatch as early as in the orchards; in fact, the larvae are often abundant in this locality in August and September, which would bring some of the hatchings as late as June.

Life History and Habits.

There is one generation of tussock-moth caterpillar a year. The moths which emerge in May, June, and July deposit eggs that do not hatch until the following spring. The caterpillar requires from forty-five to sixty days for its development, varying according to temperature and sex. The females require a longer time to reach the spinning-up stage than the males and are also much larger. The tussock-moth larva molts or changes its skin four times in the course of its development. This makes five larval stages and at the end of the fifth stage the adult larva spins a cocoon, composed of silk and the hairs which cover the body. These cocoons are not very strong, but entirely surround the larva and afford a good degree of protection to the insect during the pupa stage. Shortly after spinning the cocoon the last larval skin is shed and the pupa stage begins. In from sixteen to twenty-seven days from this molt the adult moth emerges. Fertilization ordinarily takes place at once, and within three or four days the female deposits its eggs.

Habits.

On hatching, the young larvae remain clustered over the egg mass until they have gained their normal nearly black color, which may require two or three days. In the meantime, they appear to be feeding on the material which holds the eggs together. Those larvae which hatch in the interior of the egg mass necessarily have to burrow their way out through this tough binding substance, and the mass eventually appears riddled with these punctures.

This hatching occurs in the orchards about the time the new leaves are expanding; but there is a great variability in the time of hatching, some emerging early in February, while others are still hatching as late as April or even May.

After the larvae leave the egg mass they wander to the near-by buds and commence feeding. This early feeding is in the form of minute punctures in the youngest leaves and blossoms, and the young leaf stems are also attacked. As the larvae grow older they still retain their habit of burrowing into the fleshy tissue, and so do much damage to the young fruit. They become, however, more and more leaf feeders as time advances, and the older insects do little damage to the fruit.

The larvae feed at all times of the day and are not gregarious in habits; those from one nest will become very generally distributed over the tree before the larval life is complete.

The molts are passed in more or less protected places, often on the under side of the leaves. Before molting, the larvae spin a thin carpet of silk on the surface where they expect to remain during the molt. The molt is accomplished by a circular break near the head; the larvae crawl out of the old skins and remove the head shell later.

(Continued on page 220.)

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C. H. Hamburg — *Lock Box 666, Whittier, Cal.* — G. D. Maple

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Deciduous Fruit Culture

By J. W. MILLS

THE CINSAUT GRAPE.

THERE are many broad acres in Southern California that are incapable of being irrigat d and are ordinarily too dry for the culture of most varieties of grapes, unless they are given some water during the late summer months and especially after a series of dry years, which Southern California is liable to have. Fortunately, we have a grape that is particularly adapted to these conditions and in fact gives the best results in such situations. This is Cinsaut, a purplish black grape that resembles the Black Malvoisie, though the bunches are shorter and more compact than the last named. It is an excellent table grape though it is rather tender for shipping purposes. It must be picked soon after it matures or it will lose its good qualities, the berries will get soft and the fine flavor disappears.

The vine is not large but is very thrifty and retains its dark green foliage long after most other varieties show signs of suffering from the lack of water. Its habit is low and spreading, canes a bluish cast when ripe and the buds are very susceptible to frost. The buds will sometimes be injured before they open, with frost, while other varieties much further advanced will not be injured in the least. This characteristic is not such an undesirable one as the variety does best on high and dry mesas and late frosts seldom if ever occur in such places. These qualities emphasize its adaptability to high and warm locations. In the center of the Pomona valley it is a good variety, but in the lowlands of the Chino Ranch it is a decided failure, making a poor flavored, watery grape.

The literature of the grape says that the Cinsaut is widely distributed in the south of France, from the Alps to the Pyrenees; it yields a heavy bodied, but delicate and highly flavored wine and for that reason is largely used in blends, to which it imparts its fine aroma which is best developed at about the age of four years. It is, however, a most excellent table grape. The grape develops its best quality on the warmest slopes of dry, stony hills. On light soils, its life is not long, unless sustained with fertilizers and by very short pruning. It requires a good deal of heat and ripens in the second period.

In the Santa Clara valley this grape has been grown under the singularly inappropriate name of Black Pinot. It is one of the many so-called Burgundies of that region which seems to include every grape yielding but little color. Of course its extra large bunch and berry, its glossy, deeply cut leaf, and low growth distinguish it from the true Pinot and from nearly every other of the misnamed Burgundies.

The French observation that it develops its best qualities on dry hills, is well verified in California. On low, moist soil it makes a tasteless, watery grape of high acid and low sugar content and lacks the peculiar aroma that constitutes one of its chief merits. To the fact that it was first planted in the cool coast region of the Santa Clara valley must be attributed the slight degree of appreciation it has thus far received. It belongs to the warmest parts of the state and should there be propagated for the production of both dry and port wines.

This grape has met with much favor by those who visited the Pomona station and it was always among the varieties distributed from that place. It was a general favorite for those planting for home use and some shippers have secured vines of that variety with the idea of shipping to the home markets. It will produce a little better than four tons per acre, take it one year with another.

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PRUNING THE FIG.

Mr. Geo. C. Roeding, perhaps the best authority on fig growing in California, believes in pruning the fig for the first three years. He advocates cutting the tree down at planting time to within a foot of the ground and leaving not more than four branches to form the head of the tree. These branches are to be distributed so that each will have ample room in which to spread and expand without crowding when the tree gets old. The following year he cuts these branches back not more than half, leaving not more than three branches on each of the previous year's growth. The third season, the branches are shortened about one-third and the same number of branches left on each new branch as was left the previous year. This gives the tree a good form and gets it started more upright than less pruning would. The fig is naturally of a low, spreading habit and it is necessary to keep the lower branches pruned off, and this with cutting out branches that crowd or cross, is all the pruning required after the tree has been shaped as described.

SAN JOSE SCALE.

The San Jose scale when very abundant kills the trees and also attacks the fruit, causing small circular reddish blotches wherever it attaches itself to the apple or pear.

In the early stages of infestation a few scales may be found, usually about the rings and rougher parts of the limbs or on the crotches of the tree.

The infested apple trees that the writer has inspected during the winter have practically all of the scales on the lower parts of the main trunk and larger lower limbs. The younger and newer growth toward the ends of the limbs show very few, if any, of the insects. A large number of the insects on these trees have been found dead. Although the San Jose scale has been known in the valley for about 15 years, it does not seem to spread much nor has it been a very serious pest.

Many of the insects perish during the winter, but each female of the over-wintering generation is capable, under favorable conditions, of producing about 100 young. So, realizing the rapidity with which these insects increase, it is not surprising that even a few active females in the spring may completely infest the tree. Here then lies the great importance of thoroughly spraying the trees during the win-

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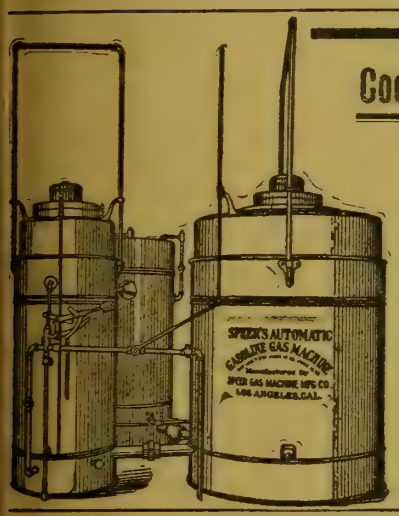

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BY HIS WIFE

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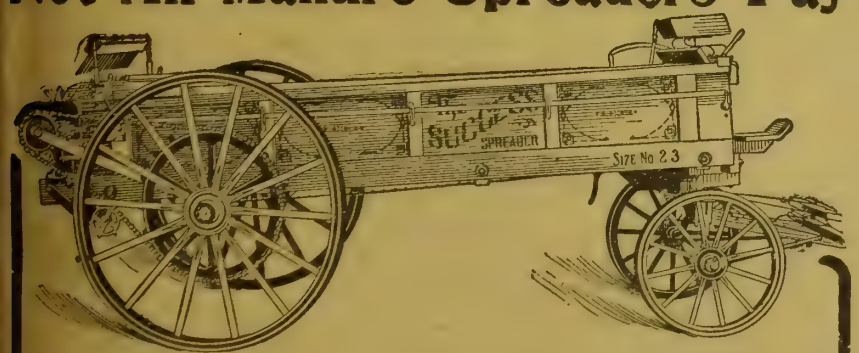

The Idea of spreading manure properly is such a good one and the benefits derived are so great you are apt to think *any* spreader will give you these benefits—that a spreader is a spreader.

There is where you may make a mistake, for some spreaders are only trouble makers and the second season they are not taken out of the shed. To make them work takes too much time and costs too much money.

If you get that kind of spreader you're apt to conclude that spreaders are made to sell and not to spread manure.

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have 28 years' experience back of them—thousands of them are spreading manure on the best farms in the country and are giving no trouble.

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When you get ready to buy a manure spreader, (and every farmer should have one) first write for our spreader book, it will help you; next go to your local dealer and see a Success Spreader but don't buy one until you have asked a man who has used one. He knows.

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COAST AGENTS.

Send for Circular.

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ter or spring. Every insect should be destroyed or else the tree is likely to be reinfested during the season.

The insect belongs to the sucking kind, which must be killed by contact sprays. Many of these sprays have been used from time to time with good results but the one now universally used is the "lime, sulphur, salt" spray.

This remedy, according to recent reports, is the leading one for the San Jose scale. The materials used in the preparation of this spray are good unslacked stone lime, flowers of sulphur, salts and water.

The results of the more recent investigations in other states show that the lime and sulphur wash, without salt, has been practically as efficient as with the salt added to it. The salt can be added to the mixture if one wishes to do so, but it does not seem to be necessary.

Lime-Sulphur Formula.

Unslacked stone lime	20 pounds
Flowers of sulphur	16 pounds
Water	50 gallons

In preparing this spray mix the sulphur into a thin paste with just enough water to break up all the lumps. Take a large kettle with 15 gallons of water, place it on a fire and heat it to the boiling point. Add the sulphur paste to the boiling water and mix it thoroughly.

Then add the 20 pounds of stone lime and while the lime is slaking stir often and vigorously enough to keep the lime and sulphur well mixed. Keep the mixture boiling vigorously for at least an hour or until a dirty orange red color appears. If salt is to be used with lime and sulphur, 10 pounds can be added at any time as it dissolves quite readily.

When the mixture has boiled long enough it is ready to be strained into the spraying barrel and diluted to the 50 gallons. It is better to dilute the wash with warm water. The diluted mixture should still retain its orange red color. If a light yellow color appears the wash has not been boiled long enough.

The mixture should be taken immediately to the orchard and sprayed upon the trees while still warm. If the wash cannot be used all at once it should be kept warm in the kettle.

The time to spray for the San Jose scale with lime-sulphur wash is while the trees are dormant, that is, any time during the winter and spring. In badly infested orchards more satisfactory results will be secured by spraying twice, once in the fall and once in the spring. In lightly infested orchards one spraying carefully and thoroughly done will give very satisfactory results.—Fabian Garcia, New Mexico Experiment Station.

STABLE MANURE.

In using the manure from the stable or barn yard, the truck gardener needs to have them piled and reduced to a fine condition by slow fermentation. Coarse and fresh manure that a farmer can use on a grass sod profitably will not do for him. Thorough decomposition is essential to get the mass in a state in which it will give up its plant food most readily.

Piling and composting, while seldom profitable for the grain farmer, is of importance to the gardener. Those who are so situated as to be able to get the sweepings from paved streets can profitably use this material for composting with their stable manure, and the black mold from the forest can also be used to advantage.

These materials should be put in thick layers with the manure in a broad, flat-topped pile, which should be chopped down perpendicularly, and thoroughly mixed by turning several times before using. The object is to keep up a slow fermentation and to check injurious heating, thus getting the pile into the condition of a black moist mold, suited for use in the hill or broadcast, as occasion may dictate.

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That is LAXATIVE BROMO Quinine. Similarly named remedies sometimes deceive. The first and original Cold Tablet is a WHITE PACKAGE with black and red lettering, and bears the signature of E. W. Grove. 25c.

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Trees Early Crawford, Hale's Early and many other varieties of Peach trees; all fine budded stock.

Large stock of all the leading varieties of Apples, grafted on whole roots and free from all pests. Also a fine stock of Cherries, Pears, Burbank and S.B.S.S. Walnuts, etc. Send for price list.

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By Mrs. Minna E. Sherman, Fresno, Cal.

MORE ABOUT HORSES.

THE unsound stallions—even the one with minor defects—should not be used;—it will not pay. I notice in the article of February 7th, I have, in speaking of the cheaper stallions used the word unsound. I should have said sound but without style. That is the way it is in the notes but I may have miscopied it for my mind has been full of State Federations. Social Betterment, and three Farmers' Institutes that came one after the other. I wish to say emphatically never, never use an unsound animal for a sire. There was a time when I thought that the unsoundness set up my disease, as broken wind did not matter, but I now believe we have a weakened condition from chronic ailments.

Work Good for Dam.

In the case of mares that have had bad barb wire cuts and been bred and turned out to pasture, the colts dropped were not as good as those of the mares that worked. I believe slow work with plenty of grain fed to the dams almost to within foaling time, gives the best colts. The mares that run at pasture in foal do not have as vigorous colts, neither do they have as large a flow of milk.

A horse is no better than his legs allow him to be. He is an animal that is kept principally for his powers of locomotion. If the legs are impaired he should be carefully cared for until again in good order, or he should be disposed of humanely. An old crippled horse is often, in mistaken kindness, turned out to pasture. The horse is a civilized animal, he has been groomed, had his feed put before him, has been watered, talked to, made a friend of all his life, praised for right doing, scolded for doing wrong; then the day comes when he is no longer useful, when work is a weariness, when he no longer dances down the road. His kind master turns him out to pasture, he wanders alone, he must hunt his food, no one talks to him, his skin becomes full of dust and dirt, he has no warm stall at night, the chill strikes in as the blood moves slowly through his veins. Poor old horse, full of aches and pains, he shivers along through the winter in the wet pastures, and in the summer his coat grows rusty with the heat, his wisp of a tail does not keep the flies from his back, his worn teeth cannot work on the dry grass, he lingers along until death mercifully disposes of him. When you cannot profitably use the old horse any longer at chores, kindly have him disposed of and bury him with all honor under the green grass in the meadows he loved when he was young.

Care of the Hoofs.

The wounds or injuries to the hoofs of a horse are made dangerous by the hard horn keeping in the pus formed, often causing blood poisoning. Nail wounds that penetrate the quick are a source of trouble. Here in Fresno many horses are not shod and the sharp granite sand works up in between the walls of the hoof and the foot, the horse becomes lame, pus oozes around the coronet and a dangerous condition of inflammation ensues.

The horn of the hoof should be cut until the pus burrows are open to the air. The horn will grow as readily again as the finger nails, but it must be pared carefully or it may come out deformed. 1-500 solution of bichloride of mercury should be forced into the wound. After washing the wound thoroughly cover the cut portion with absorbent cotton soaked with the same solution. Leave the cotton standing up high and the bandage of cheese cloth covering the whole foot, soak this in creolin, and coat with either water glass or plaster paris. The horse can walk around if he desires without injury to the foot. Every day inject into the cotton standing above the bandage enough of the bichloride of mercury solution to saturate the cotton next to the foot. After a week cut off the bandage and put on a new one, after thoroughly cleansing the wounds and entire foot.

The old idea of cow manure poultice to wounds has killed with lockjaw many animals. The idea of putting filth into a wound seems preposterous, yet we sometimes see it recommended even today.

Keep Hoofs Clean.

Thrush is a foul place in the frog of the horses foof. This is believed to come from filth and be contagious. A hoof affected should have the frog cut clean and blue stone applied to the sore. Then clean the stable floor, take out dirt for four inches, put in fresh earth and stamp it down, using crude oil to mix with the earth.

In cleaning a horses feet before cutting for any wounds, scrub the foot with warm water and soap until clean, then wash with hot water, have some newspapers and fold them with a clean piece of cloth on top and rest the foot on them instead of the stable floor, until all dressing is complete. Burn the papers and cloth as well as all removed dressings from wounds. Keep all solutions clean having white granite ware bowls for this purpose. Where wounds are open and cannot be sewed up, a dusting of tannic acid and iodoform is put on the wound, or it may be thoroughly cleansed with the bi-chlodide of mercury and a slacked lime dusted on the surface.

In California the dry summers often make a horses hoofs brittle and the following is a good cheap hoof ointment: 1 quart cotton seed oil and 2 ounces creolin. If it is desired to col

For Sale, Jersey Bull
Two Years Old

Sire, St. Lambert of Westminster, 60438.
Dam, Woodstock Lyl, 125640. Address
W. J. Cole, Anaheim, Cal.

Parties wishing to see the animal can take Santa Ana electric and get off at Hansen station; walk one-half mile East.

For Sale
Heifers and Cows

We have several head of young heifers, six months to yearling, also about ten head of Hereford cows which we will sell at a bargain. Could make up carload. They are now located at Ravenna, Cal.

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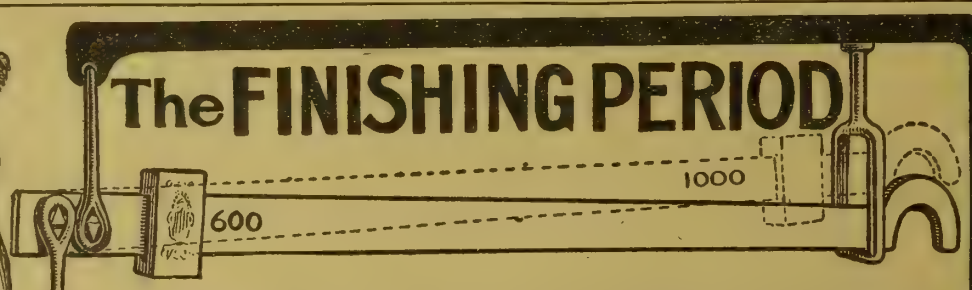

It requires more feed to produce 100 pounds gain on a fattening steer the second six months than it does the first, and more each month thereafter than the month previous. The advantage of early marketing is evident, but early marketing requires skillful feeding. Every function of the digestive apparatus must be kept in perfect condition. The matter of growth is a matter of digestion. Crowding is always dangerous unless certain precaution is taken to assist nature in eliminating or expelling from the system, waste and poisonous residue that is sure to be deposited under heavy feed.

DR HESS STOCK FOOD A TONIC

the prescription of Dr. Hess (M. D., D. V. S.) contains bitter tonics which act upon the digestive organs, strengthening and improving them so that the largest possible amount of nutrition is appropriated to building bone, muscle, milk fat, etc., and besides looking after the supply, it also takes care of the overflow—it contains the nitrates which assist nature in expelling through the pores of the skin, and in the urine, those elements that would be harmful if allowed to linger in the system. Furthermore, Dr. Hess Stock Food furnishes iron, the greatest known blood builder, and is mildly laxative, regulating the bowels during the period of dry feeding as though the animal was on pasture, and relieves the minor stock ailments. That bitter tonics, iron, nitrates of soda and potash produce the results above mentioned we refer to Professors Quitman, Winslow, Finlay Dun, and every medical writer of the age, and sell Dr. Hess Stock Food **on a written guarantee.**

100 lbs. $7.00. 25 lb. pail $2.00
Smaller quantities at a slight advance.

Where Dr. Hess Stock Food differs in particular is in the dose—it's small and fed but twice a day, which proves it has the most digestive strength to the pound. Our government recognizes Dr. Hess Stock Food as a medicinal tonic, and this paper is back of the guarantee.

FREE from the 1st to the 10th of Each Month—Dr. Hess (M. D., D. V. S.) will prescribe for your ailing animals. You can have his 96-page Veterinary Book any time for the asking. Mention this paper.

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Cream Separators, all sizes, all prices
See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

it, add an ounce of lamp back. This can be used all over a horses feet, inside and out.

Winter Care.

The California winter is often hard on horses,—during the day they sweat freely and (at night the chill comes) remain wet until morning. Blanketing them does not help the matter for they are wet all night under the covering.

They grow weak and thin under these conditions. If the horse is wet in the morning then the owner should have him clipped, a rough blanket made of barley sacks can be quickly run together and put on at night. The horse will improve in condition at once.

There is a prejudice against clipping mules; they seem to be sensitive to cold, taking pneumonia if the hair is removed over the spine. The majority of people have them given the cart horse clip, simply removing the hair from the legs and stomach. This keeps the legs dry in muddy weather.

For a Good, Practical Milking Machine see the O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

LIVE STOCK IMPROVEMENT.

Sufficient live stock should be kept on every farm to consume the roughage and some of the grain produced on the farm. This is not only necessary in order to maintain the fertility of the soil, but it is necessary in order that farming may be profitably carried on.

A general farmer should raise well-bred stock, but not necessarily pure-bred. In fact, he can hardly afford to raise pure-bred cattle, sheep and hogs for the block, or pure-bred horses to work in the field at the present market value of pure-bred animals.

The breeding of pure-bred stock is the work of the specialist. The general farmer should purchase and use pure-bred sires in his flocks and herds, and should breed his mares only to the best stallions, but he cannot afford to keep a one-thousand-dollar team of pure-bred mares as work-horses, even though they may raise colts each year, when a three-hundred-dollar span of horses or mules will do the work and good grade mares will raise colts when bred to pure-bred stallions which, as a rule, will bring the average farmer as much money in the horse market as though they were pure-bred.

See Us for Sanitary Milk Bottles. O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

True, if the plan of breeding only from pure-bred sires is practiced long, the animals on the farm become practically pure bred, and it should be the aim of every stock raiser to ultimately secure such a herd or flock.

It pays to give the best of care to well-bred stock. The scrub is usually kept at a loss anyway, and it may not make so much difference financially what care the scrub receives, but with money invested in well-bred stock, which is capable of returning a good interest on the investment with proper feed and handling, neglect becomes costly.—Prof. Ten Eyck, in Kansas Farmer.

PRODUCTIVE AGE OF COWS.

A bulletin from the Wisconsin station states that a cow is at her best during the fifth and sixth years, up to which time the production of milk and butter fat by cows in normal condition increases each year. The length of time the cow will maintain her maximum production depends upon her constitution, strength and the care with which she is fed and managed. A good dairy cow should not show any marked falling off until after ten years of age. Many excellent records have been made by cows older than this. The quality of the milk produced by heifers is somewhat better than that of older cows for a decrease has been noted of one-tenth to two-tenths of 1 per cent. in the average fat content for each year until the cows have reached the full age. This is caused by the increase in the weight of the cows with advancing age. At any rate, there seems to be a parallelism between the two sets of figures for the same cows. Young animals use a portion of their food for the formation of body tissue, and it is to be expected, therefore, that heifers will require a larger portion of nutrients for the production of milk or butter fat than do other cows. After a certain age has been reached, on the average seven years of age, the food required for the production of a unit of milk or butter fat again increases, both as regards dry matter and the digestible components of the food. A good milk cow of exceptional strength, kept under favorable conditions, whose digestive system has not been impaired by over-feeding or crowding for high results, should continue to be a profitable producer until her twelfth year, although the economy of her production is apt to be somewhat reduced before this age is reached.

DEMAND FOR YOUNG PIGS.

There is, especially in the vicinity of large cities, a brisk demand throughout a good portion of the year for young, succulent pork. It is not a difficult thing, now that such marked improvement has taken place in the stamp of pigs kept throughout the country—the old, high-backed, long-snouted, gaunt-looking animal having almost entirely disappeared—to breed a stamp of pig that, plump and well-rounded from the first, can be got ready for pork in a surprisingly short time. Pigs destined to be fed as porkers should be weaned gradually, and not too early. As soon as they are able to eat, give them, in a low and roomy trough, long enough for each of the litter to get an equal share, a feed of good thirds and fine sharps mixed with skimmed milk. This should be fed warm if the weather is at all cold, and should have the chill taken off even in summer.

Give just what they will speedily eat up twice a day. Overfeeding should be guarded against, for young

Continued on page 227.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fere Outfits See O. J. Weder Co., 555-557 So. Los Angeles St., Los Angeles.

1½ lbs. more butter

If you can increase your butter production without any increased cost or any more work won't it pay you to do it? And if you can get more butter from you milk with **less work**, that will be still better, won't it? That's exactly what you can do if you will do as MR. LEITING did—buy a **Sharples Tubular Separator.** Here's what he says about the Tubular:

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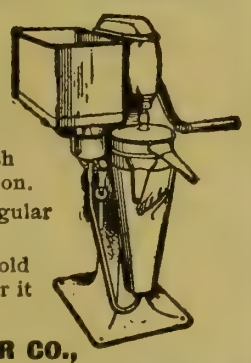
The Sharples Tubular Separator

MORE BUTTER MORE MONEY



gets all the cream there is in the milk, does it so easy that it's not work to run it at all, and is so simple, with only one little part in the bowl to wash and keep clean that comparison is out of the question.

The extra cream it gets makes the **Tubular** a regular savings bank for its owner.

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The Ornamental Garden

By ERNEST BRAUNTON

JERUSALEM CHERRY.

THIS plant belongs to that most interesting genus Solanum, which includes the night-shade, the potato, egg-plant and the garden pepper. These are only a few of the 901 species of the genus, which, according to Bailey the monographer Dunal recognized in 1852.

The Jerusalem cherry and the celestial pepper are two varieties best known to the florist and are perhaps more extensively grown today than ever before. They are sold by the thousands in eastern cities as pot plants and only of late years has their value as an ideal Christmas plant been recognized. Sow seeds of the Jerusalem cherry now.

Transplant the seedlings into flats, later pot them and give them field culture during the summer months. Pinch the little plants back to keep them stocky and dwarf. Repeat this while the plants are in the field, and up to the time they begin to bloom. They will be set with green fruit by the end of September. When lifted give them pots according to their size, and remove them to a house. A daily spray required while they are inside, to keep the foliage in good order. If there is a lot of small plants in the field put five or six into one big pot, but most likely the plants will be larger, as they will thrive in almost any soil during summer with very little care. In this way you will have Christmas house-plants covered with handsome red berries which remain on the plants for months.

ACACIAS IN CALIFORNIA.

The magic wand of Fairy Spring has touched the acacias and released their golden fragrant glory. Imagination cannot depict a more enchanting transformation scene and the footsteps of the most indifferent are arrested in admiration and astonishment. The desire to know the names of the different kinds is at once elicited but is not always readily gratified. There is a good deal of uncertainty as to the species of this group and much patient investigation remains to be done. To endeavor to learn even all the species cultivated in the parks and gardens of this city, would be a task for a specialist, but it seems possible with a little patience and by means of a few simple observations to distinguish those now most commonly noticeable. This is an attempt to do so briefly without entering into technical botanical niceties.

It will be observed then that the acacias at once divide into two groups, one group having what we will call flat leaves, and the other feather leaves. Out of a list of ten which I have selected to mention, three are of the feather leaf kind, so we will dispose of them first. Many a footstep on the way to the Smiley Library has been stopped to pay a tribute of admiration to the acacia mollissima, at the edge of the path. This then will be our type for the little group: A. mollissima, A. dealbata and A. decurrenes. The first two are often confused in trade lists and in herbaria and the botanical descriptions available do not throw a very good searchlight on the subject, However mollissima, as the name implies, has a softer appearance than the other two and the rays of the leaves are closer together on the stem, giving a more compact appearance to the leaf. In mollissima the young unopened leaf is covered with a yellowish fuzz; in dealbata it is whiter. The leaves of these two species are both more or less hoary. A. decurrens is a darker looking tree. The leaf is much like mollissima, but the leaves are shiny as compared to the others. The flowers in these species are in globular heads. They are all trees.

We now come to the flat leaved species on our list. Some have the globular flowers and others have them in spikes resembling the catkins of the male willow. Acacia cultriformis has the flowers in clusters of globular heads and A. longifolia in catkin-like spikes. The leaves of cultriformis are very white and are triangular and vertical to the stem, giving a striking effect. It is called fish-scale acacia, but it is to be hoped admirers will not use this name.

In view of the forgoing notes the following tentative key may be found of assistance by some readers:

Leaves feather like—

Rays very crowded. Leaflets more or less mealy, A. mollissima.

Rays more remote. Leaf more open and airy. Leaflets more or less mealy, A. dealbata.

Rays crowded. Leaflets not mealy, A. decurrens.

Leaves flat vertical to stem, flowers globular—

Leaves triangular about one inch, white, mealy, shrub not spiny, A. Cultriformis.

Leaves somewhat smaller, shrub spiny, A. armata.

Leaves flat, not vertical to stem flowers globular, yellow—

Leaves long, 6 to 12 inches; one nerved, pointed, A. cyanophylla.

Leaves 3 to 5 inches, A. neriifolia.

Leaves flat, not vertical; flowers pale yellow—

Leaves several nerved, A. melanoxylon.

Leaves flat flowers in spikes, A. longifolia.

The most gorgeous sights at present are: A. cultriformis, A. mollissima and A. longifolia.

A. dealbata is coming into bloom ant. A. neriifolia.

Cyanophylla comes to the trade as saligna, and I am not sure of it, but it seems more likely to be cyanophylla.

Neriifolia is known as floribunda and as retinodes.—L. A. Greata, Redlands.

FLOWERS ON THE FARM.

During the past few years the best thought of many able men and women has been given to the conditions of the farmer and the status of agriculture. Many movements looking to the betterment of rural affairs are now in progress. It is probable that every one of them is productive of permanently good results and the combined effects must be most beneficent. However, the pecuniary side of the agricultural question has been too greatly emphasized in these schemes. It is, of course, incontrovertible that the greatest single problem is that of the earning power of the farm; but it is not all.

Great numbers of farmers earn enough as it is, but they may not have the knack of doing things with the greatest economy of time and effort, and consequently farm homes do not always afford the greatest pleasure and comfort of living. Every person should know the great fact that the most successful life is the happiest one.

Like or dislike of the farm is often, and probably generally, formed before the child is old enough to be greatly influenced by the profit-and-loss side of farming. A pleasant and happy home is the very first means of keeping the boy on the farm. One means of making the home attractive is to brighten the place with flowers.

THE PICTURE.

The open-centered yard may be a picture: the promiscuously planted yard may be a nursery or a forest. A little color thrown in here and there puts the finish to the picture. A dash of color gives spirit and character to the brook or pond, to the ledge of rocks, to the old stump, or even to the pile of rubbish.

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The Vegetable Garden

By ERNEST BRAUNTON

AIR IN THE SOIL.

ROOTS need air as much as leaves do and unless they get it they will not long remain in health. When the roots are sickly it is only natural that the plant will be sickly too, as the requisite nourishment is not forthcoming.

The ordinary pressure of the atmosphere is sufficient to force air between the particles of soil in which plants are growing, when this soil is in a dry or moderately dry condition, but when it is heavy and waterlogged, a frequent condition where plants are carelessly watered, then the air pressure is insufficient to drive out the water. The fact of the soil becoming dry is in a negative way a benefit to the roots growing in it, for it paves the way for a fairly heavy watering, and this watering carries down fresh air to the soil interstices. This is only a hint, but just think it over, for there is more in it than appears at first, and these rules do not apply alone to the vegetable garden, but to every crop grown.

REQUISITES OF PINEAPPLE SOIL.

The first essential feature to be considered in the selection of a soil for pineapple culture is the temperature to which the locality is likely to be subjected.

In Florida the bulk of the pineapples must be grown south of latitude 28 degrees, as north of this, and indeed for thirty or forty miles south of this line, killing frosts are likely to occur any winter. The fruit is grown many miles north of 28 degrees, but protection from cold by means of close sheds and artificial heat is necessary. This is so expensive that only fancy varieties can be profitably grown under such conditions.

Latitude alone does not determine how low the thermometer may be expected to register, for we have what are termed cold streaks far south of localities where frost rarely occurs. Proximity to large bodies of water materially influences the temperature of a locality. The water, on account of its great capacity for absorbing heat, becomes warm during the day and at night when the temperature of the air drops the heat absorbed by the water is slowly given off and in turn moderates the temperature of the surrounding atmosphere.

Another factor which has a decided influence is that of elevation above the surrounding country. Such a point well elevated above a considerable area is heated by the warm air which rises from the lower level. It is a well known fact that warm air is lighter than cold air, and when frost occurs it is found decidedly heavier in low places. Cold air drops into these depressions and forces the warm air upward, so that the elevated points are not chilled so much as points on a lower plane.

STARTING BANANAS.

Large offsets, from six to eight months old and having well-developed corms, have found much favor in many of the best banana-growing countries. Select those whose first leaves are arrow and sword-like.

It is essential with such plants that they be cut back to within about six inches of the corm. Some have failed by setting large plants without cutting them back and so have been led to believe that the very small offsets are better. These larger plants are further prepared by the removal of all the old roots.

It is regarded as best to allow them to dry for at least several days before planting, and many experienced growers prefer to place them in heaps eight to ten deep, covering them lightly with trash, and allowing them to remain for a month before planting. After being set the central shoot may or may not grow. It is a matter of indifference whether it does or does not, for a bud from the side will make an excellent plant.

Small offsets, from a few weeks to two or three months old, are also used. The youngest of these cannot be recommended, but the older ones make fair plants. They are usually cut back when they are dug. The old roots should also be removed. Vigorous plants should be selected with well-developed corms, with stems tapering to a point and the first leaves narrow and sword-like.

PURCHASE OF FERTILIZERS.

First of all buy only from reliable firms, if possible, direct, but if you must buy through an agent or retailer see that he obtains his goods from responsible manufacturers.

See that the phosphoric acid is supplied in a readily available form, else it will not do much good. The water soluble form is the most valuable one, being immediately accessible to the plants. The citrate soluble or so-called available form is not quite so good, whereas the insoluble form is generally of very little value.

Be sure to obtain a full guarantee from the manufacturer or his agent, of the actual plantfood content. This will protect you against fraud from unscrupulous dealers. The State experiment stations generally analyse samples free of charge. Always get the best to be had, as it is the cheapest in the end. Good fertilizers must have a uniform appearance throughout the whole sack, they must be dry and fine.

STRUCTURE OF AN INSECT.

The body of an insect is made of a series of segments or "body rings" divided into the head, the thorax and the abdomen. The first two divisions of the body bear certain appendages characteristic of all insects, namely the antennae or "feelers" and the mouth-parts of the head, and the legs and wings of the thorax; there being always in the adult insect three pairs of legs and usually one or two pairs of wings. The segmentation of an insect is well shown in the abdomen, not so clearly indicated in the thorax, and in the head fusion has progressed to such an extent that this part of the body appears as a box-like structure. The skeleton is external, that is, the internal organs of digestion, the nervous system and the respiratory system, as well as the muscles of the body-wall, are supported and protected by a hard shell-like covering. This covering or chitin is so deposited in certain places as to form a hard and resistant surface, while in other places it is flexible enough to permit a free movement of the body as a whole or the functioning of its various parts.

Increase in size, or growth, is provided for by shedding from time to time, during the young or developmental period, this outer covering. This process is called "molting" and these changes of skin mark the early stages of development in insects.

It is understood that no great acreage of cantaloupes will be planted about Exeter and Lindsay this year. The shortage of cars last season with no better prospect for a larger supply this, has had a tendency to put a quietus on the business.

Farmer to the garden goes
Every sunny spring,
Bends his back, and digs and hoes;
Works like anything.
Plants his garden "sass" and flowers—
(All Congressional seeds.)
But the summer sun and showers
Brings
up
weeds.

Peach trees are selling as high as 25 cents each this year in the Hanford nurseries.

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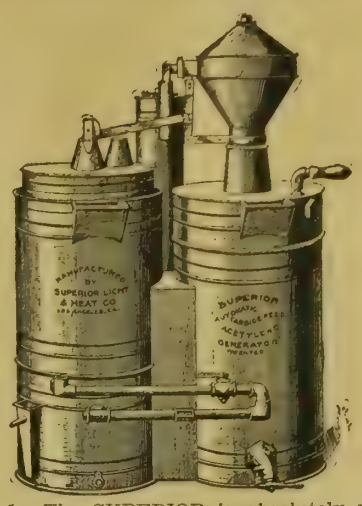

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(Signed) F. ATTRILL, The Palms, Cal.

Sept. 18, 1906.

Gentlemen:—It gives me pleasure to say that the No. 35 Superior Generator which I bought last May has been in constant use for lighting and cooking and has given the best of satisfaction. Anyone who purchases a Superior Generator of the Superior Light and Heat Company may feel certain of getting something worth having.
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With the Citrus Growers

By J. W. MILLS

WINTER IRRIGATION.

THE practice of winter irrigation can ordinarily be employed on orange groves, but there are situations where it is impracticable. The theory is a good one and wherever it can be put to use, surely ought to be employed. It may now be more generally used to advantage than formerly on account of the more general practice of growing green manuring crops. This not only increases the necessity of using winter irrigation water, but renders its use more effective.

Where large quantities of water is used on bare land, it tends to pack the soil, which is, of course, overcome by subsequent cultivation, but when the soil is filled with roots of the green-manuring plants, the soil does not pack. The increased growth of these green crops by having the extra amount of water, increases the loosening of the soil to a greater extent.

This action of the growing plants makes subsequent irrigations more effective. There is no doubt that the application of extra water while the plants are growing in the winter time will increase their growth. Even when the soil is abundantly moist from the natural rainfall, a very light irrigation will aid the growth of green crops during the dry periods between rains occasioned by the dry desiccating winds which come from the north.

The item of picking the fruit comes in on the winter irrigation question. It is quite common in the Riverside section for growers to pay a lump sum for winter water and use as much or little as they please. It is possible under these conditions to use the water economically by dividing up the runs and put the water on such sections of the grove that are not to be picked immediately. After a picking has been made the work is of course simplified. One of the most successful growers of Southern California makes a practice of giving a heavy irrigation at this time so as to have the soil full of water at the beginning of the season.

This is an important matter where green manuring crops are grown. They use up the supply constantly when growing, and after they are turned under, it is important that the soil is wet enough to decompose the green stuff rapidly. The acidity that always accompanies the decomposition of these green crops, helps to keep the phosphates in an available form and with abundant irrigations to carry the soluble elements down while they are still in that condition and brings them within reach of the feeding roots.

We are told by the authorities that the phosphates soon revert to an insoluble form in water as soon as they come in contact with the lime in the soil. If they can be delivered to the points where the feeding roots take them up, as soon as possible after contact with the acids formed by the decomposition, there will be less liability of loss through reversion Should heavy rains follow closely after the decomposition of the green crop, it is much better than an irrigation from the ditch, because the rain water is free from lime and alkaloids, and contribute to an ideal condition.

But it must be remembered that the rain water will start back again to the surface as soon as the top of the ground gets dry and before it gets dry, and if at that time a good, long soaking from the irrigation ditch is given, the elements in solution with the rainwater are driven further down. This is an incident in the scheme of winter irrigation. The main idea is to start at the beginning of the season with the soil full of water. This starts the trees off under the most favorable conditions and less water is required during the summer months to accomplish the desired end.

This heavy winter irrigation is entirely wrong under certain conditions. These are soil conditions which cannot be determined, except by a careful examination of the subsoil. A soil that has a hardpan at a depth of a few feet cannot be treated in such a way or the trees will be injured by the subsoil water. An orchard on a loose gravelly subsoil cannot be so treated either, as the water would simply run away and be lost. Such a soil must be irrigated often and little at a time.

POULTRY MANURE.

Poultry manure is sometimes credited with being a very rich fertilizer, but such is not the case. It is perhaps not worth more than $4 to $5 a ton. One hundred pounds of fresh droppings contains about .05 of a pound of phosphoric acid, .56 of a pound of potash and 1.10 pound of nitrogen. Figuring potash and phosphoric acid at 8 cents a pound and nitrogen at 16 cents, one hundred pounds would be worth a little over 22 cents.

In order to get the full value out of poultry manure, it must never become dry. It contains a large amount of silica in solution and when this hardens, it is not soluble in water, but must be heated with acid before it can be liberated. This solidified silica surrounds the fertilizing ingredients and imprisons them. The presence of this undesirable substance, is due to the fact that the chickens swallow a large amount of gravel and sand with which to masticate the food. The acids of the intestines of chickens dissolve a good deal of this and it is mixed with the droppings.

The best method of handling poultry manures is to collect it each morning and keep it in barrels or boxes and sprinkle it just enough to keep it moist and throw it in the irrigation furrows while the water is running. This is good practice on a considerable scale where poultry is raised in conjunction with fruit growing, but with the person with a few hens it is not worth while. A good arrangement is to sink a box in the ground with the top level with the surface. The droppings could then be raked into the box in the same operation with cleaning from under the roosts.

The outlook for the bee men this season is especially good in Kings county. Last year's crop of honey is about all out of the warehouses Feed for the bees will be plentiful this spring, as there wil be a great variety of wild flowers in the fields and hills.

The fine weather of the last few days has allowed the farmers around Willows to plow their ground and get it in shape for spring crops; 70 acres of alfalfa will be put in. This looks like the farmers are going to be in a position to supply milk for our creamery, which will open for work early in the spring.

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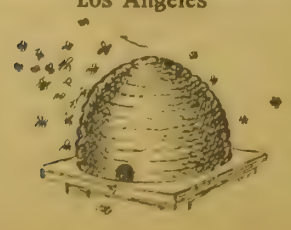

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NEW VARIETIES.

This paper has repeatedly cautioned growers not to rush into new and untried varieties of oranges, even if they are apparently a much improved strain of our best sorts. It is hard to tell what weaknesses will develop, and only several years trial will prove these new sorts to be one thing or the other. Thompson's Improved was perhaps the most widely planted of any new strain of our Washington navel. It came as a pioneer in the list of improvements. The fine texture of the skin, thin rind where other oranges produce a thick rind, early ripening and good shipping made it prominent from the start. It has been a money-maker for some growers, but it has not added to the reputation of the California oranges for fine flavor. Some large growers have called it a wooden orange, because it is full of rag, and is not a juicy orange. The call for it from planters has not kept up to percentage that it formally did.

The same general remarks may be made regarding the Navelencia. It was considered a valuable acquisition when it first made its appearance, but it is seldom seen, and very seldom spoken of now.

Another fine appearing navel orange came out a few years ago as a sport, and has been called Cason's Golden Nugget. It is very fine in appearance, and is later in ripening than the regular navel. The trees are very willowy, and could appropriately be called Cason's limbertwig. We have been told that the fruit is in most cases badly damaged by the winds, the long pendulant branches not being stocky enough to resist the force of even ordinary winds. So it seems that the future navel orange must be one in which are combined the most desirable qualities already found in the "straight" Washington navel that is most universally planted. The orange is like fine live stock. Fundamental characteristics are apt to be sacrificed when fineness in quality is carried to excess.

A BACKWARD SEASON.

All farm and orchard work in the Sacramento valley is very much behind this season, owing to the inclemency of the weather. Steady north winds for days at a time, and then almost continuous rains ever since, have made this one of the most backward seasons, and little has as yet been done either in the way of plowing, planting, pruning or spraying. In short, all farm work is a month behind and the ground is so full of water that it is yet impossible to work it. The season, at best, will be late, although there is yet ample time for a good one. So far it has been beneficial for fruit, as the cold weather has kept the sap from rising and reduced the danger from late frosts. The great dread of the fruit man is a warm January and February followed by a frosty March. This danger is being reduced during the present season.

APPLICATION OF FERTILIZERS.

A proper application of the fertilizer is all-important. The question of broadcasting or sowing in drills depends entirely upon the crop to be sown, the nature of the soil, etc. The application should always be done from two to four weeks before sowing. Chili saltpeter is generally given later in the form of top-dressing. In all cases, the fertilizers must be mixed with the surface soil as intimately as possible. Never fertilize one-sided, but apply all the necessary plantfoods.

The Fresno Agricultural Fair Association, which was temporarily organized in Fresno a short time ago, has decided to incorporate with a capital stock of $100,000. The stock will be sold to ranchers, vineyardists and orchardists.

Notwithstanding the long rainy season there has been but little suffering among the stock in the vicinity of Madison. There have been but few fatalities among the sheep, cattle and hogs. The warm weather of the past few days has started the grass and there will soon be an abundance of feed. A few of the farmers have commenced plowing.

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SOMETHING DOING.

From the Congress of the United States to forty or more State Legislatures, including California's Assembly, statesmen are making laws to regulate about every thing and every body in the whole country. Up to the present writing laws have been enacted, or will be enacted, governing beef packing establishments, pure food and medicine decoctions, abolishing free passes on railroads, governing Standard Oil operations and prohibiting insurance combines. These are all good laws and in line with much needed reforms. Laws have been passed, or will be passed, prescribing more severe penalties for gambling, for wife desertion and child labor. In some states tipping and grafting have been hit hard. In others the primary election laws have been enacted giving the man a right to vote direct for the man he wishes to see nominated. This is a death blow to the power of the political boss. Taking the calendar as a whole, it covers, to a considerable degree, the frailties of human nature, and the question is, how much good can be gained by legislation along these lines when applied to the human family.

The effort to abolish original sin by legislation has never proven a brilliant success, and it is doubted if it ever will. The old world will go along about in the same old way so long as time will endure.

The tide of immigration, which has been unusually high during the last few years, continues to rise. During the six months ended September 30 the immigrants admitted to the country numbered 682,560, an increase of 87,000 over the same period of last year, and of 225,000 over 1904.

ARGUMENTS WHICH TELL.

At no period in the history of California promotion has the disposition to set forth the advantages of the state been stronger than at the present time. Sections of California heretofore neglected are coming to the fore with well-timed information of possibilities never known to exist in those localities.

We have in mind, as an example of this endeavor, Colusa county, which, through its enterprising Chamber of Commerce is disseminating valuable facts about its climate, soils and products. Situated about 100 miles north of San Francisco, in the heart of the Sacramento valley, this wonderfully productive territory gives promise of becoming one of the richest agricultural portions of the state. Up to this time the public was unacquainted with its resources. But a resumè of its products develops the fact that it is not only a fine stock country, one in which wheat, oats, corn and alfalfa are grown in abundant crops—but also citrus fruits. It is claimed oranges mature for market from two to three weeks earlier than in Southern California, and the trees are never effected by pests of any kind.

These are important features for the enlightenment of easterners seeking a California home, and the fact that lands sell from $35 to $100 per acre is an inducement to attract homeseekers to that county.

But Colusa is only one of many counties north of San Francisco, which are before the public at this time. The fact is, the entire north half of the state, the territory north of the Tehechapi is in the lime light of public attention and from this on will merit careful consideration in the minds of tourists and home-seekers.

That California, as a whole, is today the most observed, most discussed and most sought after by easterners of any state in the Union, is established beyond the shadow of doubt from the hundreds of thousands of letters pouring into it from every section of the land, from men and women desirious of finding the acme of climate and home conditions to pass the remaining years of their earthly career. Of a verity we are in the land of paradise and great and grand is our future. Let us get busy. Promulgate our surpassing country and its natural advantages; keep the ball of progress and improvement rolling right along, and we shall become the queen of the states in the constellation of the Union.

TELEPHONES ON THE FARM.

The wide extension of the use of the telephone in country life is one of the phenomena of our day. In a report recently received from Nebraska, it is stated that the extension of the telephone in that state is twenty-five per cent. over 1905. In Iowa the gain last year was about the same per cent.

Two things are shown in these reports. First, that the farmers are fast making the country home a counterpart of the city home, and, second, that the telephone has made itself indispensable to farm life in such a way that it is now regarded as one of the necessities of a rural place.

The general use and advantages of the 'phone in cities are well-known, but few city people are aware of the extent of its use in rural districts or of the many ways in which it has modified the conditions of country life. Like the locomotive, the 'phone "annihilates distance." It economizes time and locomotion by facilitating the exchange of ideas, dispensing thus with many obstacles to business and social intercourse. One of the advantages of great moment is the effect of the telephone in improving the conditions of farm life, making the country attractive to persons who could not endure the isolation and dullness of rural existence as it was formerly. Rural crime is more easily kept under, now that the country is cobwebbed with telephone wires. The report notes, for example, the assistance given by the 'phone to constables and sheriffs in suppressing the tramp nuisance.

The export trade in American butter is growing very rapidly. In 1904 and 1905 the amount exported was 10,000,000 pounds each year. In the fiscal year, ending June 30, 1906, it had increased to 27,360,537 pounds, the value trebling in the two years.

California Tussock Moth

Continued from page 211

While the larvae are normally quiescent for some time preceding the molts, they are, however, able to walk if disturbed, and may change their position before emerging.

The larger larvae often assume a wandering habit, which causes them to leave the original food plant and seek others, sometimes at a considerable distance away. Isolated larvae are often found on young trees several hundred feet from a nest. It is possible, also, that the very young insects may have been carried by the wind and birds and so aid in the general distribution. As the female moth is wingless, the distribution of the species must take place exclusively in the earlier stages.

The Mature Larvae.

When the larvae are fully developed they select somewhat protected places on the trunks of trees and the under side of branches, where they spin up sometimes in masses of cocoons; when the caterpillars are very numerous, these masses may be plastered over the trunk in the form of a blanket several inches wide. As the males spin up first they often form masses by themselves, the females spinning their cocoons elsewhere.

The caterpillars sometimes also spin up on the under side of bunches of leaves at the end of small twigs. The leaves are then securely webbed to the twig by the caterpillars before the cocoons are spun. The spinning-up habits of the caterpillar then result in a general distribution of the cocoons over the surface of the tree, as well as large masses on the trunks, and also on fences and other suitable objects in the vicinity.

The Moths.

When the moths emerge the males fly about in search of receptive females. The females have a greatly developed abdomen filled with eggs. The legs are fairly well developed, but the wings are rudimentary and unadapted for flight. The female is so heavy that it makes little effort to crawl about, but usually remains clinging to the mass of cocoons from which it has emerged. Here it also deposits the egg mass, usually attached to the cocoons, but sometimes is directly cemented down to the twig. The laying of the eggs takes place in a very few days after emergence.

The males are supposed to be attracted by the odor of the females, and will go considerable distances to find isolated insects. They have often been noted attempting to gain entrance to the muslin-bag cages where the females had emerged.

Mating may take place at once after the female has emerged, or a considerable time may elapse. The eggs are often laid within an hour or two thereafter. While laying eggs the female remains stationary, building up the mass by moving the tip of the abdomen to and fro. The eggs are deposited in a fibrous cementing material, which completely covers them and holds the mass together very firmly, and also makes a strong attachment to the body against which the mass is deposited. As the eggs are ejected the abdomen of the moth slowly contracts, making the insect very much smaller than it was before the egg-laying commenced.

The males fly during the day and also in the evening, or possibly all night when the weather conditions are favorable.

The larvae and female adults are remarkably hardy. The caterpillars can withstand long periods of starvation and will develop in confinement under conditions which would kill many other insects. Some larvae developed from eggs in a Mason jar with the lid closed down, their food for the most part being a rotten apple; but this diet was varied at times with some apple leaves sprayed with arsenate of lead

Another interesting fact about the larvae is their apparent sense of direction, for when beaten from the trees they lose very little time in finding their way back to the trunk. This ability to find the trunk of the tree seems to be due probably to vision, as any object such as a post standing erect will attract them. That the finding of the tree trunks is not due to accident can be readily seen, for when the caterpillars are shaken from the trees they soon form into lines which converge at the trunk, and only a few can be found aimlessly wandering about.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

The Chino Land Company shipped 500 steers to Los Angeles last week.

25 cars of potatoes of fine quality have been shipped from Hemet this winter.

The beet acreage about Oxnard as recorded now, is materially in excess of the crop of 1906.

All the tile drainage that can be done this year is finished, making 500 acres so improved at Chino.

Between five and six hundred cars of hay have left the Hemet station for the market this season.

Hemet is having a very early Spring. Fruit trees are all in bloom, and the grain fields are making rapid growth.

The Central Creamery Company has completed its arrangements for the erection of a creamery at El Centro.

The California Vegetable Union has begun shipping cabbages, a car being shipped from Olive this week, at $20 per ton.

The unusual moisture of January and February set back the beet crop about Oxnard very materially, but not seriously.

Central California farmers would like the rains to hesitate long enough to allow them to stir the soil between showers.

The beet contracts signed to date at Oxnard, are for more than 13,000 acres, with quite a large amount still to be agreed upon.

The express shipments from Escondido for the week were, 181 cases of eggs, 1650 pounds of chickens, 1310 of cream and 435 of butter.

Beet seeding is in progress now for next season's big sugar crop of the Chino factory. About 200 acres will be planted on the Chino ranch.

The following has been planted to trees on the Hemet Tract this Spring: —250 acres walnuts, 150 acres oranges, 100 acres apricots and 20 acres to peaches.

The condition of grain and hay in San Diego county has been improving. That now in ground is doing well, and the ranchers are busy adding to the acreage.

The alfalfa growers about Corona will soon be able to make the first cutting for the season. The recent warm, spring weather has advanced the growth and practically insures seven cuttings this year.

Last Wednesday the farmers near Heber met and formed an association to be known as the Heber Fancy Melon Growers' Association, and in the neighborhood of 250 acres of cantaloupes will be planted.

HORTICULTURE.

The rainfall to date at Whittier has been 15.72.

Riverside's rainfall to date has been 12.64 inches.

Total rainfall for the season at Fairmont 22.79 inches.

San Bernardino reports a season's total of 16.81 inches of rain.

This last rain brings the total fall for the season at San Jacinto to 13.58 inches.

The orange growers at Lemon are busy packing oranges at the new packing house.

The rainfall for the week at Escondido has been 1.08 inches, making 13.18 for the season.

W. N. Bradbury of Escondido, has 30,000 young eucalyptus trees which he will plant out at once.

The last storm dropped ninety-four hundredths of an inch at Chino, making the total to date 19.64.

Citrus growers in all parts of the State are confident of a fine yield and good prices for next season.

Nearly all sections of the south have had at least six inches of rain, to date, over the season preceding.

Harry E. Griffith of Ontario, has sold his five-acre gum grove east of Turner's orange orchard to Charles Land, for $1,000.

The Brawley Cantaloupe Growers' Association has over 600 acres of cantaloupes signed, and expect to have from 100 to 200 acres additional.

S. A. Pease of the San Bernardino Board of Horticulture writes: "The San Bernardino Horticultural Commission purchased for the year 1905, 76,000 pounds of cyanide, for 1906, 80,000 pounds. The cyanide gets the pests. Nearly every spray pump in the western part of the country is for sale.

Oranges are moving quicker this week from Fullerton. The C. C. U. shipped eight carloads during the past week; the Placentia Orange Growers' Association, five carloads (Benchley Fruit Company, six carloads (and two carloads walnuts;) Thomas Strain three carloads, and C. C. Chapman two carloads.

Northern California

AGRICULTURE.

Yolo county is rapidly becoming the leading live stock breeding section of the state.

Two carloads of horses and mules from Gridley, were shipped to Los Angeles last week.

Contracts for 4,000 acres of beets have been signed by the Pacific Sugar Company of Tulare county.

The H. G. Lacey Company of Hanford, has received a shipment of 17 carloads of wheat from Reedley.

Mrs. Susan G. Chamberlain, has sold her tract of one thousand acres in the Olive Hill colony, near Browns Valley.

The Colusa Herald says: "The road from here to Williams is now said to be ten miles long, 30 feet wide and 3 feet deep.

Messrs. O'Brien, Jones and Faria received a consingment of 2500 thoroughbred White Leghorn chicks from Petaluma this week.

The herds of pure bred horses, cattle, sheep and hogs owned in Central California are getting more numerous and more famous every year.

Dr. Frank Griffith of Inyo County, is making ready to inspect a large band of cattle that Mills and Aldwinkle will ship to that county.

J. H. Williams has sold two fine Holstein bulls, Sir Gerben Josephine to T. J. Ray, and Sir Mercedes Josephine to A. O. Swanson, both of Tulare.

Plans are being laid in the vicinity of Corcoran and Alpaugh for the planting of large tracts to sugar beets. At Corcoran 500 acres will be planted and at Alpaugh it is said that 1000 acres will be put in.

The hog market is still high and will probably remain so for some time. Local dealers are paying 7½ cents per pound, and it don't take much of a porker to bring from $15 to $20.—Sutter County Farmer.

The lima bean market is an enigma at the present time. Following two seasons of unusually large crops, and with the prospect of another bumper yield, there is a hold-over stock of about 240,000 bags. This is about one-third of the crop for the two counties of Santa Barbara and Ventura.

HORTICULTURE.

Monterey county has 650 acres planted to apple trees.

The average price for raisins this year will be better than last when it was about $3.70.

Several car loads of beans were shipped from Saticoy to eastern points during the past week.

Santa Cruz county is credited with having 32,000 acres in apples, 650 in apricots and 1200 in prunes.

From ninety Royal Anne trees Mr. Chubb, near Vacaville, sold cherries to the amount of $2,200, or an average of $24.40 per tree.

One orange grower at Sierra Madre is trying the experiment of shipping oranges to Los Angeles and Pasadena in bushel baskets.

P. B. Norton, traveling agent for the Southern Pacific, has secured 160 acres in the neighborhood of Goshen, and has set out already 14,000 eucalyptus trees.

Henry D. Foulk has purchased fifty-seven acres of land from the Oslands at Indian ranch, near Dobbins, and will plant an apple orchard on the property.

Several big tracts of land in Tulare county have been secured to be planted to eucalyptus trees, and only the scarcity of trees is preventing the work from going ahead.

The raising of eucalyptus trees, which is assuming the proportions of an immense industry in California, is beginning to interest hundreds of farmers in the San Joaquin Valley.

The Eucalyptus Forestry Company, which was incorporated recently in Fresno, has secured 320 acres of land at Alila and has already begun the work of planting it to eucalyptus trees.

Sonoma county papers say that in number and elegance of the designs, in beauty of decoration, in the size of the individual exhibits and in the beauty of the golden fruits, the last Cloverdale Citrus Fair, will go down in history as the most successful exhibit ever held.

Dr. Somers reports to the Board of Supervisors of San Benito county, that he had made exhaustive tests of reported cases of glanders in Hollister, and had also submitted the matter to Prof. Ware of the State University. The disease was a mild form of lympangitis and not glanders.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

Minorcas, Liver Complaint.

I wish to ask Mrs. Basley if she can give me a remedy for my hens. I have a fine flock of Minorcas, have lost three or four this winter. At first they lose their appetite, walk around in a careless, dignified manner, will eat little or nothing, combs turn black, then die.?

Hoping to see a remedy if there may be any soon in your columns, and thanking you in advance.—J. C. J.

Some strains seem to be subject to this trouble. I have even known their bones to turn black and on holding a post-mortem examination, discovered the liver to be black and the egg organs also. I decided that it is liver complaint, congestion or inflamation of the liver. Dr. Salmon says that the cause of this is lack of exercise combined with over feeding; also from the birds taking tainted or moldy food, or poisonous substances into their digestive organs.

He recommends half a grain of calomel, followed by 20 grains of Epsom salts and 2 grains of bi-carbonate of soda after twelve hours. When improvement is shown give green food, tonics and raw beef."

I would strongly advise you to be careful what beef scraps you are feeding, bad, spoiled, or moldy beef scraps or meat meal is poisonous.

Pruning Walnuts.

How soon will it be safe to prune walnuts?—H. S. T. Lordsburg.

If there is but light pruning to be done on the walnut trees, they can be pruned at any time before the buds start, but if any large limbs are to be taken off it should be done in January or early in February before the sap begins to flow.

The flow of sap from the cuts does not damage the tree unless it should be pruned excessively, and in fact some loss of sap is at times an advantage as it retards leafing, and in that way the tree may escape damage by frost, or may make the tree leaf out late enough to escape some of the early blight.

The only objection to pruning after the buds have started is that new growth is broken off, where it should not be unless great care is taken in removing the pruning.

Molt and Trap Nests.

Since taking your paper I saw in an article a reference to a former article which I should very much like to have read. This former article was on how to make one's hens moult in the summer, so that the birds would be ready for steady laying in December. Could you tell me what issue this was in, and whether I could now get that issue, or could you tell me where I could get that same information?

I should also like to know if trap-nests are a patent affair which a handy man should not attempt to make on account of that patent?

I understand that your paper is open to questions that puzzle your readers.—A. K. T., Imperial.

The article to which you refer is "Dress-making in the poultry yard;" it is in the "Cultivator" of July 12th, 1906 I think you you can get it by sending stamps to this office. Some trap-nests are patented, but the nests made by Mr. Gowell of the Maine Experiment Station are not, and can be made by a handy man or any woman in half an hour. Plans of these have been repeatedly given in the Cultivator.—Mrs. A. B.

Liquid Manure.

Last week I asked you to print a question in this week's Cultivator. Today in looking over a back number I see that to have a question answered we must sign our names. I will ask the same question now.

Can young tomatoes and cucumber plants be forced to grow and bear earlier fruit by applying liquid manure, (made by pouring boiling water on cow and horse manure) at frequent intervals; or will it injury the plants? I have tried it a number of times on flowers, such as violets, pansies, etc. The "diet" seemed to do them lots of good as I had earlier and handsomer blossoms than my neighbors.—"Subscriber," Kern.

There are few plants that would not be materially helped by the treatment you describe, but care should be taken to have the liquid weak and apply it little and often, rather than seldom, and of dangerous strength.

To Toughen Hoofs.

Will you give me a formula for making a good hoof ointment to make the hoof grow and toughen brittle hoofs? Every rancher needs such an ointment in this dry country.

I take a great delight in reading the Cultivator and keep all the numbers for future reference. There is a great deal of good information to be gathered from them. Thanking you for your favor, and wishing you every success.—"Choctaw," Santa Paula.

Make an oil by using, cotton seed oil one quart, Creolin, 2 ounces, lamp black, one ounce. Mix and apply with a bunch of rags tied on a stick. Use freely inside, as well as on the outside of the hoof.—M. E. S.

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St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be isued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. FILCHER, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

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Large Birds. Prolific Layers. Large White Eggs.
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Successor to Captain E. Pryce Mitchell
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Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

HOPPER FEEDING.

TWO weeks ago the description of "hoppers" and how to make them was our theme. Today the subject will be the rations to fill the hoppers.

"Hopper-feeding" is getting to be quite the fashion and some people seem to think there is magic in the words and that so long as the food is fed in a hopper, no matter what that food may be, they are sure of success. One lady writes me "I am hopper-feeding corn, wheat, barley and oats. Another is feeding rolled barley, wheat and Egyptian corn also in hoppers, before the fowls all the time.

Variety of Food Needed.

One writes "I know your rules for egg production comfort, exercise and proper food, and I would like to know how to combine excercise with hopper feeding, for if I remember rightly you advocate feeding all the whole grain in the scratching pen so that the hens will have to exercise to get it, what should hoppers contain?"

What should the hoppers contain is a very important question. Poultry breeders differ just as doctors differ but the progressive and up-to-date breeders all admit that a variety of foods brings the best results, and that variety should be composed of grains, or their bi-products, green food and animal food.

Having decided upon this, let us see how the balanced rations can best be fed in hoppers as that is the way we wish to feed. The ration must contain the elements necessary to keep the birds in good condition, and also what is needed to make eggs. The food in the hopper may be just what we would use in the mash were we feeding that once a day.

I will give you a number of formulas of rations, any of which may be used advantageously in the hopper. These rations are used by such well known poultry men as Dr. Nottage, Dr. Sanborn and Mr. P. R. Parks; I will also give you some recommended by Professor Jaffa in his most helpful bulletin on "Poultry Feeding" (Farmer's bulletin 164.) besides the formulas that I have used and am now using, and I am never without plenty of eggs even when eggs are at their highest price.

What Dr. Nottage Feeds.

Dr. Nottage may, I think, be considered as the father of the hopper method, for he was the first to advocate it and was many years ago called "the man who feeds his hens twice a week" on account of using this plan. He commenced feeding the dry food as soon as the chicks were hatched, then as they grew and were weaned from the brooders and placed in colony houses on free range, he fed them from the hoppers placed near the colony house and near water, these hoppers he filled whenever they needed it with a mixture of cracked corn and wheat, keeping another box or hopper full of beef scrap and ground bone.

This he keeps before the fowls all the time they are on grass run, when however they are moved into winter quarters, as he lives in a cold climate and yards his fowls for the winter, he puts a hopper into the yard for a few days and notes the amount of grain they eat per day, this amount of grain, corn wheat and oats is fed in the litter of these cratching pen at four o'clock each day, and only the meat scraps are kept in the hopper. Green food, cabbage or sugar beets are fed at noon and no mashes at all. This is Dr. Nottage's plan and he has had good success with it. You note that he makes his fowls exercise in the scratching pen when they are not on free range.

Dr. Sanborn's Recommendations.

Dr. Sanborn tried the dry feed method very thorcughly for fifteen years before recommending it to others. He wanted to be quite sure and he realized that it takes time, study and patience to gain experience.

His formula for hens in the winter is: bran two measures; corn meal two measures; finely ground clover hay two measures; meat meal one measure. A cabbage, beet or some vegetable of that kind is supplied daily. In summer when the hens have free grass range his hoppers are filled with bran two measures; middlings one measure; corn meal one measure; meat meal one measure. This dry feed is before the birds at all times and will give a fine summer record along egg line.

The Parks and Basley Formulas.

Mr. P. R. Parks' formula is equal weights of corn, wheat, oats and barley ground as fine as flour, if we can induce the miller to grind it so fine and the beef scraps are kept separate and before them all the time.

My formula is very simple and has proved successful in this climate for years: One measure cornmeal; one measure alfalfa meal; one measure beef scraps and two measures of bran. In the breeding season I add one measure of rolled oats and if I find the hens are becoming too fat I lessen the corn meal. My hens being "bred to lay" like most of the American breeds fatten very easily and I watch for that, for I want eggs and not fat hens.

One has to use judgment in feeding hens as well as children. Formerly I mixed all the feed except the beef scraps and those I kept in a another hopper, but when I was away from home the ground grain hopper went empty and the hens were reduced to eating beef scraps instead, which affected their bowels. I really prefer keeping the beef scraps or the granulated milk seperate, because when I have plenty of skim milk to give the fowls they will eat very little beef scraps, also if on free range and there happens to be plenty of insect life they will not take so much of the beef scrap, whilst if it is mixed in the rations they are obliged to take it.

How to Balance Rations.

If too much meat is being fed, the fowl's droppings will be frothy, brown or yellow. In that case if you wish to continue such diet to force the egg yield give charcoal, ground in the feed, so that they have to eat it and add a little Nux vomica (to strengthen the digestion) to the water. One thing about this dry feed method, if the hens are fed finely ground feed and if it is rightly balanced they will not become too fat. But some of the breeds if fed whole grain in the hoppers, so that they do not have to excercise for it, will put on fat instead of producing eggs.

We have to watch our hens for that; when I was in the egg business I had one yard that I kept for hens with a tendency to plethora, I was trap nesting my hens and so had the opportunity of hefting the hens almost every day; if I found one hen that was beginning to get too fat I put her into a pen that was deprived of corn and had an extra allowance of alfalfa meal. Whilst in another pen were the biddies that needed a more carbonaceous diet. This was one of the secrets of my big egg record, one of the means of getting "bred-to-lay" hens.

Leghorns or all Mediterraneans do well on a generous corn diet whilst Rocks and Wyandottes require a narrower ration, less corn and more meat. To be really successful you should watch the fowl's growth weight and the amount of fat on their bodies and adapt the feed accordingly.

The Jaffa Rations.

Now about Professor Jaffa's rations. He has written and compiled one of the best bulletins ever put before poultry breeders, on poultry feeding. In it he gives the analysis of all the available feed stuffs on the Pacific Coast, he gives eight formulas for rations, and explains how by using the tables with the analysis of grains etc. that each person can balance the rations with the food that is cheapest in his own part of the country. More than that he gives the analysis of nearly all the proprietary foods used in California. It is simply an invaluable book for the poultry breeder. Write to the Director of the Agricultural Station (University of California, Berkeley, Cal.) and ask him to please send you (free) "Bulletin 164 on Poultry Feeding."

CARE OF BREEDING STOCK.

At this season of the year extra care should be taken of the breeding stock that we may get strong fertile eggs. Should your breeders be mated up in a weak and debilitated condition, the result will be far from satisfactory. For should the eggs prove fertile, the germ will not be strong enough to hatch, or if it does, it will not have vitality enough to develop into a strong healthy bird. In order to get results, we should give our breeders the best possible attention.

Selecting Breeders.

In mating up our yards, we should eliminate all birds that are not fully developed, and put in only strong healthy birds. We never believe in breeding a bird that has had a severe case of roupe. It is a good plan in most breeds to mate cocks with pullets and cockerels with hens if we would obtain best results. We have mated cockerels to pullets, and know of other breeders that practice this with good results, but as a rule, the best results are obtained by following the old plan of cocks and pullets, cockerels and hens.

After we have our yards mated, we should see that they are free from lice—should be provided with a good dust bath. If this is done at the beginning, and the houses are sprayed once a week with a good kerosene emulsion, we need not worry much about lice and mites.

Scratching Sheds.

All well regulated poultry yards should have a scratching shed, which at this season of the year, should be under cover, and if it can have a floor in it, all the better, the straw in this should be changed as often as it becomes foul.

After the rain season is over, the shed can be put out in the yard, but the straw or litter should be changed as often as it becomes damp.

Food for Breeder.

A good food for breeders is to give them for the morning meal a mash of some well balanced ration, and care should be taken not to feed them more than will be cleaned up in twenty to thirty minutes. After the morning meal has been cleaned up well, throw into the straw in the scratching shed, (which should cover the floor to the depth of six inches) a few hands full of some good scratching food, this will keep them busy till the noon hour, when they may be fed a "short ration," consisting of a mash, made of beef scraps, or cut bone, bran, alfalfa, clover, or lawn clippings. Then again in the afternoon, throw some grain in the scratching shed that they may be kept busy till time for the evening meal, which should be of whole grain, consisting of wheat, kaffir corn and cracked corn. Care should be taken not to get the birds over-fat, or to feed them more than they will eat up clean, for then they will refuse to work in the litter.

Green Food.

Green food should be provided, and fed at least once a day. This can be done by sowing alfalfa or rye either in a small yard, which can be cut and given them, or if you have range, the flock can be turned on it for an hour or two each day. When several pens are kept, and you wish to turn all on the range, after you have them yarded long enough to get them thoroughly acquainted with their quarters, small openings can be made for the females to go out from all yards, care be taken that the male birds do not get out. The hens will always return to their own pens. In this way you have advantage of the range, without being troubled with the male birds fighting. But the males should always have extra grain food provided and fed in the pens. Sometimes it is best to fasten a small box or cup up in each pen for the male to eat out of; care should be taken to get it high enough to keep the hens from eating the grain. Most male birds eat very little while the hens are eating, and unless some precaution is taken, they will get very thin. This is almost a necessity with birds with large wattles such as Mediteraneans. Should we feed enough to satisfy the males, there is danger in getting the females too fat.

Keep plenty of fresh water, grit and shell before them. Provide shade in warm weather. Keep them gentle and contented, and you will not be disappointed in the results.—Frank H. Thomas.

TURKEYS FATTENED IN PENS.

The possibilities of profitably feeding turkeys in confinement and improving the quality of the flesh was tested at the Utah experimental station, with a lot of six nearly mature birds, kept in a small pen with an open front closed by a curtain. Whole wheat was scattered in straw litter in the morning, corn was fed at noon, and a grain mash at night. The turkeys were also given skimmed milk, sugar beets and alfalfa leaves, with grit or gravel. One of the turkeys was sold at the end of three weeks, the others were fed for four weeks.

Considering the test as a whole, the six turkeps made a total gain of 16.4 pounds, of which 13.2 pounds was made by four birds. When bled and plucked the turkeys lost 7 per cent. in weight. The author calculated that there was a profit of $3.45 on an original investment of $8.50. "As to the quality of meat, those who ate it reported that they never ate better turkeys. There was no question about the quality of the meat being greatly improved. The two smaller turkeys were not in as good condition as the others, but the meat was excellent." This experiment shows two things: First, that young turkeys may be taken from the farm and fed in small pens at a profit; second, that the quality of the meat is greatly improved by such feeding.

It is well for the poultry raiser to keep a close watch of the legs of his fowls. If more would do this the poultry would be saved attacks of the insects that burrow under the scales on the legs and produce what we call "scaly legs." Often the trouble is not realized till the pest has spread all through the poultry yards and most of the fowls are affected. Then some of them have become so bad that it is extremely difficult to cure them. If they are taken in time a good bath of the legs in a kerosene emulsion or some other insecticide may check the invasion, as the insects will be annihilated. If the legs are as they should be they will be smooth and glossy in appearance, no matter what their color may be.

A shipment of peach trees from New Haven, Mo., to Hanford has been declared infected with peach root borer. The purchaser was reimbursed by the shipper.

THOROUGHBRED *S. C. White Leghorns*

They are vigorous and healthy and great producers of large white eggs. They have good size, rich yellow legs and bills. Eggs from special mated pens, $1 per 15, $5 per 100

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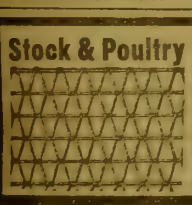

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Breeder of White Leghorns, Black Minorcas and Barred Plymouth Rocks. Eggs for hatching, $2 to $5 per setting. Single birds, trios and breeding pens a specialty.
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Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in these Beef Scraps.

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Black Minorcas Exclusively

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Cocks—1st and 3rd. *Cockerels*—1st, 2nd and 3rd
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Pullets—1st, 2nd, 3rd, 4th and 5th. *Pens*—1st and 2nd.
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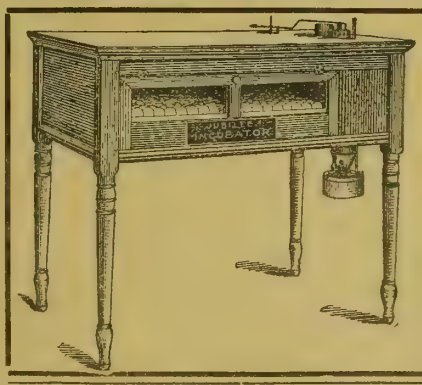

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Sold under five years guarantee, freight prepaid, for the low sure-hatch prices. Must do the work for you or we take it back at [illegible] in use, giving satisfaction. Write today for the new free Sure-Hatch Book No. 25. Read it before you buy an incubator at any price.
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Pullets-5th. Pens-3rd and 4th. Hens-1st and 2nd. Cockerel-2nd.
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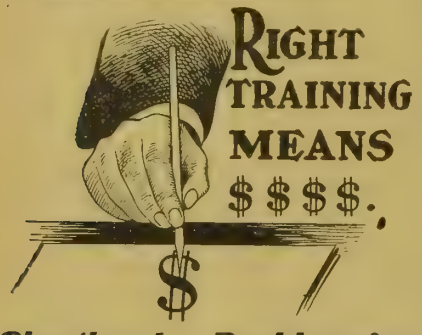
When the young stock is permitted to range the fields and the woods at will, they will take on a muscular developmentthat can not be abtained by those confined. It is nature and nature has its limits upon which it insists and these limits must not be ignored.-Inland Poultry Journal.

13.83 inches of rain has fallen at Hemet this season.

PACIFIC COAST BUSINESS COLLEGE



Shorthand Bookkeeping
Terms $11.00 per Month
We give a special course in business management FREE, to all students; write us about it. Address
H. E. COX
159-163 S. Market St. San Jose, Cal.

S. C. White Leghorns
AND
Indian Runner Ducks

Eggs for hatching, either Leghorns or Ducks, $1.50 per setting, $6.00 per hundred.
FOR SALE—300 Indian Runner Ducks. Reason for selling: My business requires my being from home. Have no one to look after the ducks when I am away.
PRICES—5 Ducks and 1 Drake, $6; 10 Ducks and 2 Drakes, $11; crated and delivered to express company. Must be sold by March 10th, so if wanted order at once. Send for illustrated catalogue.

JOHN P. BODEN
638 Second St. Watsonville, Cal.

Spargur's Trap-Nested White Leghorns
Eggs from 200-Egg Hens, $1.50 per 15, $6.00 per 100
From Second Best Pens, $1.00 per 15, $5.00 per 100
Indian Runner Duck Eggs
$1.00 per 13, $5.00 per 100
Blue Andalusian Eggs, $2.00 per 15, prize winning birds
H. G. Spargur - Soquel, Cal.

EGGS FREE
If not as represented
SALSIPUEDES EGG RANCH
120 Acres devoted to poultry, fruit and dairying
S. C. White Leghorns; Ringlet Barred Rocks; Fishel Strain White Rocks
EGG $1 50 Per 15, $6. per 100
C. G. Redman, Watsonville, Cal.

1907 LOS ANGELES 1907
We won on White Rocks, Barred Rocks, White Wyandottes, Buff Leghorns, White Crested Black Polish.
EGGS FOR SALE. SEND FOR CIRCULAR.
Golden Crest Poultry Ranch.
Box 412 Santa Ana, Cal.

SHADE'S RHODE ISLAND REDS
The World's best layers.
Write for Folder.
J. W. Shade. San Bernardino, Cal.

TOULOUSE GEESE
Pure bred breeding geese **$4. to $6.** per pair. Also eggs **15c.** each
F. F. CLAYTON,
R. F. D. 4. Box 63 Sebastopol, Cal.

WHITE WYANDOTTES, Hubbard Stock
Heavy Laying, prize winning Strain. Eggs $2 for 15: Baby Chicks, 20 cents each. **CANNON POULTRY CO.**
251 Morgan Ave. Los Angeles, Cal.
Take Slauson Ave. car to 29th St., walk 1 block west

Anconas Lay Anconas Pay
Imported and Domestic Matings Now Ready. Surplus Stock All Sold. Let us book your order at once for future delivery. **L. L. Viereck, Pres.**
Ancona Club of America, Albany, Oregon.

White Brown Leghorns Finer than ever. Send for catalog, for full particulars.
Hemet Poultry Yards
Hemet, Cal.

Turkey Hens and Turkey Eggs
For Sale
Geo. Louis T. Rivard, Fillmore, Cal.

KEEPING EGGS.

I was interested in reading the report of the man who had packed 300 dozen eggs in Water Glass, and was disappointed in results. My experience with 150 dozen was different, but still worse. In 1905 I packed 60 dozen and was so well pleased that in 1906, I filled the two stone jars and two kegs that were used before, after washing them well, and a small barrel which had been used for brandy originally and for two years had had salt in it. The vessels were clean, the eggs were fresh, and every layer of eggs at once covered with the solution of Silicate of Soda, as per formula: One part to ten of water, but the results were different.

In the first year there was a thick scum on top of the water but the rest was free, and the shells clean and natural as when put in and the eggs all right in every way. In the last year all the eggs were covered with a slimy jelly-like deposit, which when they touched the wood, (the inside and bottom of kegs and barrel) formed an insoluble cement so that the shells had to be broken to get the eggs out. They were discolored, and rings of lime or soda around them where they set in the liquid a day or so before the layer was filled out.

I got the stuff from the "Owl Drug Company,' of Los Angeles the first year, and from them at San Francisco the second year, ordered and billed as Silicate of Soda each time, but in neither case as thick as you describe, it was about like the thin grades of syrup that are sold. The heat and coolness were about the same each year, and the eggs were kept in the same place, the tank house, which is the coolest place we have in summer. My well water is a little alkaline, but so far as I remember was the same as used the first year. It goes without saying, that I want no more of that stuff, unless I can find out what was the cause of the failure and remedy it.

I have packed eggs in lime and salt with good results. You spoke of what read like a mixture of lime water and salt brine being good, will you please give exact formula?—W. B. C., Ceres, Cal.

A Book Worth Having.

The large 124-page catalogue and three poultry lectures that are being given away by the McClanahan Incubator company, 709 So. Main street, Los Angeles, are worth asking for. The book contains 250 photographs of scenes that are of interest to every one who raises chickens for pleasure or profit. It is certainly inspiring reading.

The three lectures are different from anything offered by any other company. They give full details of every feature of poultry raising from the selection of the eggs to the care of the chicks.

The "Success" Brooder, both hot air and hot water, are also made by this firm and are meeting with a large sale. Description and prices of both incubator and brooder, together with the lectures and catalogue will be sent free to all who write for them. You should send in your name and address today. We would appreciate it if you will mention this paper.

Among the exclusive breeders of Southern California White Leghorns using the columns of the Cultivator is Mr. Frank E. Baldwin of San José. Mr. Baldwin is one among the new breeders of this famous strain, having come from Colorado a few years ago. He has given his entire attention to the breeding of Leghorns and has a model yard, introducing many new ideas in housing his flocks, and has produced many prize winners. His new catalogue gives the pedigree of the birds in each yard and is very neatly gotten up.

DOUBTFUL IMPROVEMENT.

"I must say that Josh's education has improved him," said Farmer Corntossel.

"Did you ask him to help you on the farm like you said you would?"

"Yes."

"And he consented?"

"No. But he was so polite in his way of refusin' that I felt real flattered."

Old Trusty Incubator
On Free Trial

We will send you an Old Trusty on free trial for one, two or three hatches and pay the freight. If you find the incubator not exactly as represented, and if it does not do the work, return it at our expense. We have confidence in our machine or we wou d never make this offer.

Construction

Genuine 12-oz. cold rolled copper tanks, selected redwood lumber, double top and bottom, double walls, double doors, best lamp and regular made

Save $10.00 to $15.00

Write today for catalogue and trial offer No. 1
REMEMBER, WE PAY THE FREIGHT

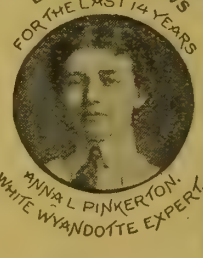
McClanahan Incubator Co.
709 So. Main St., Los Angeles, Cal., and Eugene, Oregon

Maud S, 1st Prize Hen, San Jose, 1906
Bred and Raised on My Ranch

Baldwin's White Leghorns

Baldwin's Leghorns are all right in blood lines and for heavy laying right straight through the year they are unexcelled. I breed nothing but White Leghorns and make them a study, aiming at quality and market value combined.
My yards are modern in every respect and I invite inspection. Think of us when you think of White Leghorns.
My best pens are made up of stock from the first prize winners at the great show at Madison Square Garden, New York, 1905 and '06.
All stock sold on a guarantee to be as represented.
Eggs. $1.50, $2.00, $3.00 and $5.00 per setting (15). Incubator lots, $6.00 and $10.00 per 100. My $6.00 eggs are from selected yards. My $10.00 eggs are from especially selected matings of my finest birds.
Send for catalogue giving full description and prices of my matings and show records.

Frank E. Baldwin *The White Leghorn Specialist*
Phone Suburban 82 46 Washington Ave., San Jose, Cal.



White Wyandotte Farm
INGLEWOOD, CALIFORNIA.

Los Angeles Show Winnings
Poultry Breeders Association, 1907

1st Cock	1st Cockerel	1st Hen	1st Pullet	1st Pen
2nd Cock	2nd Cockerel	3rd Hen	2nd Pullet	3rd Pen
4th Cock				

Silver Cups—White Wyandotte Club Cup for Best Pen; Association Cup for Best Male; Wm. H. Hoegee Cup for Best Display.
Now Booking Orders for Eggs

Newbert's "Gracious"

Won at San Jose, Nov. 12, '06, in one of the largest and best comparative shows held in the state. At Oakland, Jan. 7, '07, she scored 96 3-4 and won over the best collection of pullets ever shown in California. Also won the special $25.00 cup for being the WHITEST BIRD in the show.
Both judges said that, "She was the real Leghorn and hard to beat." I also won 1st Cock, 2nd Cockerel, 2nd Pen. I entered ten birds, winning eight prizes.
I started right—let me start you right. My handsome strain will improve any flock. Remember, your best bird is always your best layer. Send for large and handsome circular, yours for the asking. Eggs, $6.00 per hundred; $1.50, $3.00, $5.00 per setting of 15 eggs. I have for sale Newbert's Wonderful Phenomenal Berry Plants, $1.00 per doz.; $7.50 per hundred.

F. M. Newbert's Poultry and Berry Farm
Palmetto Ave. - Sacramento, Cal.

Fit a Round Peg in a Round Hole

Yes we meant every word that we said last week about the failure in poultry is largely at the start. First get good eggs from well nourished, properly fed hens. Then feed your young chicks on A. C. W. Chick Food and you will succeed in raising fine strong birds. No one would feed an infant 6 weeks old soda crackers or second-hand bread crusts. Don't feed your infant chicks improper food either. A. C. W. is made specially for infant chicks and infant digestions.

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901-907 Macy St. - - Los Angeles, Cal.
Manufacturers of A. C.W. Egg and Chick Food and all raw materials, Blood, Meat Meal, Beef Scraps, etc.

Eggs For Hatching
FROM
Standard Bred Poultry
Buff and Brown Leghorns, Buff Orpingtons, Columbian Wyandottes and Bronze Turkeys
W. W. Bliss, Duarte, Cal.

Single Comb White Leghorns Exclusively
Eggs for Hatching, $1.00 per 13, $5.00 per 100. High Fertility Guaranteed. Phone Park 682.
J. E. Beadle 901 St. Louis St., Los Angeles, Cal.

Eggs for Hatching
Thoroughbred White Rock eggs for hatching at $1.50 for 15 $6 per hundred.
Mammoth Bronze Turkey eggs, 20 cents each.
Also a dozen choice W. R. cockerels and two M. B. gobblers for sale.
Jennie R. Frater Charter Oak, Cal.
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White Rocks The best kind and the best of the kind. Eggs until further notice, 15 for $1.25 or $5.50 per 100.
White Plymouth Rock Ranch
J. T. Davis, Prop. POMONA, CAL.

What a Bare Spot Means

Watch closely for the first indication of lice on cattle. Don't wait till they are infested, and rub themselves bare in their misery. The wisest course is to dust Instant Louse Killer *into* the hair along the back, and at base of tail and horns, **whether you see signs of lice or not.** If there is a louse on the animal this powder will kill it.

Instant Louse Killer

does it's work thoroughly—kills lice on poultry, horses, cattle, ticks on sheep, bugs on cucumber, squash and melon vines, cabbage worms, slugs on rose bushes, etc. It is also a standard disinfectant and deodorizer. **Guaranteed.** Comes in shaker-top cans, and being a powder, may be used in cold weather as readily as in hot weather. Look for the word **"INSTANT"** on can, as there are many imitations.

1 lb. 35 cts. 3 lbs. 85 cts.

If your dealer cannot supply you, send your order to us.

Manufactured by
DR. HESS & CLARK,
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THE PETALUMA INCUBATOR CO.,
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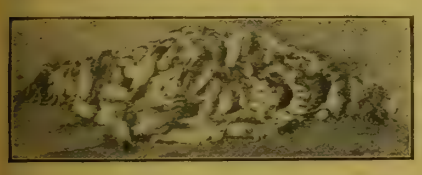
Pacific Coast Distributors.

Now is the time to go for gophers with Bille's Gopher Poison. The gophers go for it and it will go for them good and plenty every time.



This is a photo of 201 killed in one day on a ten acre field before they could get back to their holes, with one bottle of

BILLE'S GOPHER POISON

Endorsed by Agricultural Colleges and Experiment Stations. Not one of the ordinary poisons, but in a class by itself. Has had greatest success in the Middle West. The secret being that it is most attractive to gophers, squirrels, etc., and sure death to them. It gives the grain a glossy coating, retaining the poison for weeks. Hundreds also die in their holes by eating it there. We have bought the patent rights for this section and are selling at the eastern price of $1.25 for large bottle. The ingredients cannot be bought at a drug store for that price. Money refunded if not as represented—so printed on the bottle. If your dealer does not keep it send $2.50 for two bottles, express prepaid by us. Anyway send for circular with affidavit of above killing, and a few out of many testimonials.

Compounded under Bille's patent by

West Coast Stock Food Co.
818 San Fernando St. Through to Alameda St. Los Angeles, Cal.

Manufacturers of the celebrated West Coast Poultry Foods.

Send us the names of twelve persons who keep poultry and we will send you free "The Poultry Manual," by those high authorities, F. L. Sewell and Ida E. Tilson, profusely illustrated.

El Casco Poultry Yards

Pure Bred Stock

S. C. White Leghorns—Large eggs, great layers. ***Eggs 75 and $1. per 15, $4. to $5. per 100*** according to matings. All hens weigh 3½ to 5 lbs. Satifaction guaranteed.

J. F. GOETTING, El Casco, California

MY EXHIBIT OF
WHITE, BUFF AND PARTRIDGE **Wyandottes**
Won 26 Ribbons and Special Prizes at the Poultry Breeders' Show. 1907
R. D. Box D87 **L. E. BERKEY,** Fullerton, Cal.

S.C. White Leghorn Eggs for hatching $5.00 per 100. Large birds.
Good Laying Strain
Take Redondo car via Gardena to Strawberry Park
Stanley Senior, Gardena, Cal.

Wyandottes that are **Wyandottes**
WHITE and BUFF. Typical shape, fine layers and fertility guaranteed. Eggs for hatching. Write your wants. ***A. W. Huskins,***
713 Waterloo St., Los Angeles, Cal.

TEST THE EGGS.

On the sixth or seventh day the eggs should be tested for fertility. This is a very simple thing. Take the egg to be examined between the thumb and forefinger, encircling it lengthways. and hold it between the eye and a bright jet of flame, such as a candle, lamp, or gas jet. If it is quite clear, it may be at once thown out, but if opaque, or nearly so, it is fertile. If the germ has died, the contents will appear uniformly muddy, and the egg may be thrown out. If any are doubtful they may be put back in the nest for two or perhaps three days, and re-examined. If no change to a very dark or opaque shade has taken place the egg is in all probability addled, and therefore useless.

If an egg should happen to be broken in the nest, the latter must be thoroughly cleaned out, perhaps a little fresh earth sprinkled over it, and re-lined with fresh hay. Some of the other eggs will probably have been splashed with the contents and these must be sponged clean with tepid water, dried, and returned to the nest, otherwise the pores of the shell would be badly closed up and the chicken inside might perish for want of the air which ought to percolate through.

A setting hen requires but one good feed a day, and that should be good, hard grain of some kind or other. Corn is as good as any, and perhaps barley comes next.

The hen should be fed about the same time every day, allowing her to be off the nest a shorter time during cold weather than during mild weather. Ten minutes during cold and twenty during warm weather are not excessive intervals. If the weather is very cold while the hen is off feeding, the eggs in the nest may be covered with a peice of flannel.

It is better not to give the setter any liquid until she has finished her allowance of grain. Many hens, if they can get to the water first, swallow so much of it that they do not care about eating afterwards. A hen which seems to have quite gone off her feed must be tempted to eat somehow, or her natural heat will go down and the hatch be a poor one. Soft food may be given, half oatmeal and half cornmeal, but as soon as her appetite returns she should be put on a diet of hard grain. A dust bath should be available for the setting hen each day, when she is off during feeding time. When several setting hens are off the nest at the same time there is apt to be some quarreling and fighting over the food, and this should be prevented. A very quarrelsome hen should be fed by herself. No green food should be given to setting hens, as this relaxes the bowels, but a supply of hard grit should be within reach although they will not likely use much of it. Before returning to the nest, take out some of the eggs, or she may break some by treading on them, placing them beneath her when she has —W. R. Gilbert, in Journal of Agriculture.

A Reliable Firm.

O give endorsement of a business house to Cultivator readers, menas that we are convinced that any business with which you favor it will be rewarded by courteous treatment.

Such recommendation can be given for the Newell Mathews Company of Los Angeles. This firm began business in 1886, incorporated in 1899, and the business has constantly increased from year to year. The company is the Southern California agent for the celebrated Studebaker vehicles, Oliver chilled plow, Emerson disc plow, Gem hay press, Thompson buggies, together with a complete line of recognized farming, orchard and garden tools.

It has been the policy of this firm to carry only such goods as have been thoroughly tested and found satisfactory in every respect. A large catalogue, filled with illustrations of everything used by the farmer, the orchardist and the gardener, will be sent free to all who write for it mentioning that the firm was recommended by this paper.

Piles Cured In 6 To 14 Days.

PAZO OINTMENT is guaranteed to cure any case of Itching, Blind, Bleeding or Protruding Piles in 6 to 14 days or money refunded. 50 cents.

The Improved Pacific Incubators

Best on the Coast—best anywhere. Made right—prices right. Guaranteed. Catalogue free. Also great **Combination Brooder.** It is great—both indoors and out. When the chicks are hatched feed them the celebrated

West Coast Chick Feed

A rightly balanced ration for the little ones. Manufactured by

West Coast Stock Food Company
818 San Fernando St., Los Angeles, Cal.

The Largest Poultry Supplies House in the United States

Peerless Chick Feed

Is the Cleanest and Purest Chick Food possible to produce and insures

Health and Rapid Growth in Baby Chicks

GRANULATED MILK—the Pure Protein Food

315 S. Main **HENRY ALBERS CO.** Los Angeles

BEMIS PLYMOUTH ROCKS
BARRED AND WHITE

PRIZES WON At Alameda County Poultry Association Show, Oakland:

21 Regular Prizes.
4 out of the 5 Specials given by the American White Plymouth Rock Club.
Silver Cup for the ***best collection*** in American Class.
Silver Cup for ***best display*** in American Class.
Hines Silver Cup for 10 Best White Plymouth Rocks in Show.

I am able to ***furnish*** the ***best*** birds and eggs at moderate prices. I cannot furnish large lots for incubators.

MRS. FLORENCE E. BEMIS, 1757 NINETEENTH AVE., OAKLAND, CAL.

Incubators? ***Baby Chicks?***

Must Hatch Incubators

Hatch all the fertile eggs and produce vigorous, healthy chicks—two factors that count in the poultry busiuess. We operate the most extensive manufacturing and poultry plant on the coast, and guarantee all our products. If you are in need of anything for the poultry business, write for our illustrated catalogue "B" We have the largest hatcheries in the world, and furnish the best S. C. White Leghorns it is possible to produce.

Order Early and Get the Desired Dating. MUST HATCH INCUBATOR CO. Petaluma, Cal.

Mission View Poultry Ranch

White Wyandottes That Are Trap-Nested

Prize Winning, Large Egg Laying Strain. Won Nineteen Prizes in 1906!

Mammoth Bronze Turkeys Lakenvelders
Silver Laced Wyandottes

Mrs. C. D. Hubbard Box 282 San Fernando, Cal

THE FEATHERLY FARM ORPINGTONS

BUFF BLACK WHITE

Our yards are now mated for the season; containing winners of nearly 100 Prizes, Specials and Cups at California's leading shows. Our handsome Mating List and Catalog describes them all. Send for it today; it is free. Our birds are bred for utility and heavy egg production as well as beauty. All egg orders booked in rotation. Satisfaction guaranteed.

P. L. Harley, Box C, Redlands, Cal.

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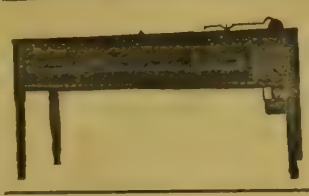
1907 Los Angeles
Best Hot Water Incubator

"Model" Made by Chas. A. Cyphers

"Peerless" Made by Henry Albers Co.

Call and See Them or Send for Free Catalogue

315 S. Main **Henry Albers Co.** Los Angeles



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They Are the Best on **Earth**

Principal Incubator Co., Graton, Cal.

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$1250—10 1-3 ACRES LEVEL LAND, 3 ROOM house, barn, well, family orchard; an ideal chicken ranch; price $1250. 15 miles from Petaluma. 5 miles from Santa Rosa WM. MAGER, SANTA PAULA, CAL.

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PINK PIGS PAY—FOR SALE—THOROUGHbred Duroc-Jersey Pigs, both sexes, eligible to record; pedigrees furnished; 7 months old and in good flesh. Price $15.00 each, crates free. M. EVERHAM, R. F. D. 2, Box 73, Kingsburg, Cal.

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IMPORTED CLYDESDALE AND HACKNEY Stallions. I sell better stallions for less money than any other man in the State. Can sell you a good stallion for $1000. WM. McKIE, 407 Aliso street, Los Angeles, Cal.

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VICTOR BEAUTY PINS—ENTIRELY NEW idea in fasteners for collars, cuffs, dresses, children's clothes, etc. Set of 3, 25c postpaid. Agents wanted. MERRILL & CO., Suite 426, Mason Bldg., Los Angeles, Cal.

DUCKS.

INDIAN RUNNER DUCKS—A WORLD beater for producing Eggs. Pure strain. $1.00 for 13; $5.00 for 100. Black Langshans, Prize Pen. $2.00 for 13. F. M. BENDER, Corona, California.

FOR SALE—INDIAN RUNNER DUCK eggs from choice stock, $1.00 per setting of 13; incubator lots at short notice at $5.00 per 100. F. J. QUANT, Madera, California.

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HARRISON'S R. I. REDS AND WHITE Rocks. The best out West; 12 awards at Poultry Breeders' Show, including 1st and 3rd Red cockerels, 1st and 2nd Red pullets in a class of 36 pullets; White Rocks 1st pen, 1st and 3rd pullets and 3rd cock. New circular. Eggs $2.00 for 15, $5.00 for 50, $8.00 for 100. LAKE AVENUE POULTRY YARDS, 757 N. Lake Ave., Pasadena, Cal.

HOLMBY POULTRY FARM, Breeder of S. C. Black, Buff and White Orpington, Barred Rocks, S. C. White Leghonrs, Pekin Ducks, Mammoth Bronze Turkeys, Tumblers and Homer Pigeons, 130 Prenuims won at 4 shows. stock and eggs for sale,—write your wants. ARTHER LETTS Prop., WILL PURDY, Manager, Hollywood, California.

GOLDEN LACED WYANDOTTES—BLUE ribbon winners wherever shown. At Oakland, 1907, won 4 first, 3 second, and 2 third prizes—score 90 to 94 1-4 points. Eggs from prize-winners, $2.00 per setting. Fine breeders at lowest prices. Eggs proven infertile will be replaced if returned to me at buyer's expense. J. P. ENGLISH, Arroyo Grande. Cal.

ORPINGTONS AND REDS; PEKIN DUCKS—13 prizes on 16 entries also silver cup at "Breeder's Show" 1907. Eggs now ready, can't help but hatch winners, we breed them that way, fifteen years' experience counts. Our stock are great layers, rapid growers, top market quality, we guarantee satisfaction. GOODACRE BROS., Box 45, Compton, Cal.

ARMOUR'S BEEF SCRAPS, MEAT MEAL, and Blood Meal for poultry feeding are highest in digestible protein. If your dealer does not handle them write us direct. Circular containing formulae free. THE ARMOUR FERTILIZER WORKS, 736 H. W. Hellman Building, Los Angeles.

McKINLEY POULTRY FARM—BREEDERS of buff and white Wyandottes. Member American Buff Wyandotte Club. Golden Seabright and Pyle Game Bantams. Eggs $3.00 and $2.00 per 13. Take San Pedro Interurban car to McKinley, first house north. BOX 11, R. F. D., Gardena, Cal.

BLUE ANDALUSIANS—I did not exhibit this year but have better stock than ever. Eggs for hatching, $2.50 per 14. Incubator lots $7.50 and $10.00 per 100. No fear of inbreeding as we have three strains. MRS. T. R. GRIFFITH, 3111 Walton Ave., Los Angeles.

SINGLE-COMB WHITE LEGHORNS, FINE white, large, birds; good layers. Hatching and shipping chicks. Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER, Ontario, Cal.

WHITE LEGHORN AND WHITE WYANdotte eggs for hatching, from extra choice, trap-nested, bred-for-eggs stock. Leghorn eggs $5.00 per 100; White Wyandotte eggs $1.00 and $1.50 per setting, $6.00 per 100. F. T. McLAUGHLIN, Gardena, Cal.

BLUE RIDGE POULTRY YARDS, W. H. Brown, Prop., 128 Ave. 32, Los Angeles, Cal. Breeder of Blue Andalusians. Won more first prizes than all our competitors combined. All specials went to our strain. Eggs $1.50 and $2.00.

S. C. WHITE LEGHORN EGGS FROM THE bred-to-lay Blanchard strain. Large birds. $1.00 for 15; $6.00 per 100; Free city delivery. C. M. GIBBS, R. F. D. No. 4, Los Angeles, Cal. Phone W. 591.

FOR SALE—PURE BRED STOCK, S. C. White Leghorn Eggs. Large eggs, great layers, eggs for hatching only. $1.50 per 15. $6.00 per hundred. RICHARD POWERS. Anaheim. Cal.

FOR SALE—ROSE COMB WHITE LEGhorn cockerels and pullets. Eggs for hatching. VARIAN'S POULTRY YARDS, 895 N. Catalina avenue, Pasadena, California.

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FOR SALE—STANDARD BRED BUFF ORpington cockerels, full grown, fine birds, price $3.00 and $4.00. C. ROTH, Clovis, Cal.

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WANTER—THE ADDRESS OF PARTIES having white guinea fowls or their eggs for sale. Address J. S. DOUGLAS, Bin 7, Bakersfield, Cal.

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FOR SALE—SCOTCH COLLIE PUPPIES. Pedigree furnished with every sale. $15 and $25. Write for description. E. B. VARIAN, 539 Douglas Bldg., Los Angeles.

RANCHES WANTED.

WANTED—ALL PARTIES WANTING TO sell or exchange their improved or unimproved ranch property, orange or lemon groves, to come in and list them with us. If your property is well kept and bearing, we have clients with whom we can place it. If not convenient to call, write for blanks, and they will be sent to you. J. N. WILLIAMS & CO., No. 303 I. W. Hellman Bldg., Los Angeles.

RANCHES FOR SALE.

RANCH FOR SALE—240 ACRES IN Mariposa Co., 40 acres under cultivation, balance easily cleared. Plenty of water. Suitable for hay, grain, stock raising, or apple orchard. Price $900. For information, address CHARLES GLISCINSKI, Los Angeles. California.

TREES.

FOR SALE—GRAFTED WALNUT TREES, being Placentia Perfection grafted on native Walnut root, and Placentia from seed. Santa Barbara and Immune Walnut trees from choice seed, sizes from 4 feet to 14 feet. large stock, and must be sold: Also general nursery stock. GEORGE B. WARNER, Santa Ana, California.

FOR SALE—4000 VALENCIA AND 1000 W. Navels; one year buds on three year roots, clean and vigorous; buds taken from bearing trees. F. E. CHAPMAN, R. F. D. Box 34, So. Craig Ave., Pasadena, Cal.

FOR SALE—MISSION, BLACK SPANISH, and Taft's Kadola Figs; fine trees at 25c and 35c. Order quick if you want them. H. L. BAUER & SONS, 737 South Spring Street, Los Angeles.

FOR SALE—S. B. S. S. WALNUT TREES from 3½ to 8 feet high, at 10c to 20c each in lots from 10 to 100. Send in order at once A. J. HIXSON, Route 2, Box 48, Burbank, Cal.

TURKEYS.

FOR SALE—11 TURKEY HENS; SOME ARE laying; all have mated with full-blood bronze gobbler. Price $2.00 each. Address R. D. BOX 68, Santa Ana, Cal.

WANTED—TURKEY EGGS FOR SETTING. Also to buy a 240-egg incubator. Address BOX 155, R. F. D. No. 1, Whittier, California.

WATERMELON SEED.

FOR SALE—FINE RED CHILLEAN WATER Melon seeds. Price 50c a pound. WILLIAM BRITTON, Burbank, California.

When writing advertisers mention Cultivator

1907 STATE FAIR.

The next State Fair gives promise at present of being one of the greatest exhibitions held in California since the Midwinter Fair.

The National Irrigation Congress of two or three thousand delegates from all over the United States will meet in Sacramento at the time of the Fair, and many of the States represented will send exhibits of their products, which of themselves will make an extensive and very attractive feature. At present there is talk of enlarging the name as well as the scope of the Fair and call it say, "The California Agricultural and Inter-State Irrigated Products Exposition."

The opportunity for California counties to assemble and show their products will be the best they have had for a long time, and it is anticipated that every section and every product of the State will be liberally represented, while every effort will be put forth to make the poultry and livestock departments the biggest and most attractive ever seen on the Coast.

Chicken Sense.

The Cultivator is in receipt of a very neat booklet, issued by Agricultural Chemical Works of Los Angeles, Cal., containing 48 pages of valuable information to the poultry raiser. It gives information on artificial incubators, Poultry health and hygiene. A chapter on fattening for market. Cause and treatment of different diseases of poultry. The proper food for the chick, the laying hen, an egg record, and other information that will tend to help the poultry raiser, whether he be a large or small breeder. The booklet should be in the hands of every one, and will be mailed free if you write to Agricultural Chemical Works, and tell them you saw it in the Cultivator.

The Leedham Bulb Co. of Santa Cruz, California, is offering through the columns of the Cultivator their new catalogue and price list, containing a large assortment of their products, which ought to be of special interest to all lovers of flowers.

The demand for stone fruits in Central California is brisk and a great many trees are being planted.

California Horticulturally

By JOHN ISAAC, Sacramento, California

ORCHARD PLANTING IN THE NORTH.

TREE planting is being vigorously rushed in the upper part of the state and every advantage is being taken of the fine days which have been sandwiched in between the storms. We are assured by many growers that there is nothing in fruit growing any more and yet people—and among them many of those who advise against it—are planting more orchard trees this season than ever. From all parts of the Sacramento and San Joaquin valley as well as from the Coast counties reports are received to the effect that trees are being imported this season in larger quantities than ever before known, and the stock of our local nurseries was long since exhausted. Certainly, with all its drawbacks, Californians still think the fruit business is a pretty good one.

COMMENDABLE PRECAUTIONS.

Kings county has adopted a stringent ordinance against the importation of rooted grape vines into that county from any section in which either the Anaheim disease of phylloxera is known to exist. The devastation wrought by these two troubles among the vineyards of the state, have led those sections which have not yet been attacked by them to take extraordinary precautions against them in the hope of keeping them out. Many shippers of vines [illegible] these precautions and argue that they are unnecessary, but the vineyardist is following a commendable policy in taking every precaution for his own protection.

NEW COUNTY COMMISSIONS.

Very many of the counties of this state, which have heretofore regarded County Horticultural Commissions as needless, and in some instances denounced them as a form of graft, are awaking to the necessity of availing themselves of the protection which they give. Several counties in which no such office has been recognized since the adoption of the law over a quarter of a century ago, have made appointments during the past few months and now Siskiyou and Tuolumne counties are moving in the same direction. It is evident that every fruit growing county is at last awakening to the fact that if they are going to grow fruit they must be on their guard against pests and diseases, and no better form of protection can be found than that given by the law organizing county horticultural commissions.

EXPERIMENTING WITH TOBACCO.

J. B. Stewart, a Government expert in tobacco culture, has been making investigations in some of the northern counties recently for the purpose of determining whether there is any soil in that section suitable for the growth of tobacco, and has given it as his opinion that there are considerable areas in which there is a possibility of growing a good quality of this plant. Experiments in tobacco growing have been carried on in California from its earliest settlement, but for some reason they have not been continued to a successful determination. It is not improbable that, within our great area of territory and with our wonderful variety of soil and climate, sections can be found in which this culture can be carried to commercial success and another source of agricultural wealth be added to those we already have. It is to be hoped that Mr. Stewart's efforts will be crowned with success.

REMEDY FOR OLIVE KNOT.

The olive knot has obtained a foothold in some of the Northern Californian olive orchards, and while it is not spreading rapidly, and is not very serious as yet, it is still causing much alarm among the growers. The European varieties appear to be most susceptible to its attacks, while the Mission olive, while not immune, is very resistant. This disease belongs to the pear blight group of disease in being of bacterial origin, and little can be done for it in the way of remedies. The best treatment in the case of young trees, is their removal and destruction. In the case of older, bearing trees, their lives may be extended for some time and a number of crops secured before they succumb to the disease, although, even in such cases, the best thing is to get rid of them, especially if they are in a position to infect other trees. If, however, it is desired to continue the tree, all knots should be removed with a sharp tool, and this tool should be thoroughly sterilized, a paste composed of slaked lime and sulphate of copper may be applied to the wound. We have known old olive trees to be materially aided by this remedy.

BORDEAUX SPRAYING.

From our present knowledge there is nothing to be gained by using the bordeaux mixture as a winter spray. If any winter spray is used it should be the lime sulphur solution, which acts both as a fungicide and insecticide. There is, however, considerable evidence to show that Bordeaux applied at the time that the blossoms are opening will do much toward the control of the apple and pear scab. This early spraying should not be neglected with pears, and it may prove profitable in the treatment of apple scab.

The powdery mildew was carefully observed in our Bordeaux experiments this year, but we could demonstrate no advantage from its use on this disease.

CHERRIES IN SOUTHERN CALIFORNIA.

The subject of cherries was discussed at the recent Farmers' Institute at Pasadena, and on this subject, all present were agreed that it did not pay to attempt to raise cherries in Southern California in the the valley districts. There are small areas in some of the mountain valleys where the cherry grows and bears to perfection with the exception of an occasional season when late frosts cut the crop down. One member of the meeting declared that he had tried to raise cherries in Pasadena and found that he could better devote the land to raising oranges and pay five dollars a pound for his cherries in the market. There is one good thing about the cherry in such districts. It does not leave any room for doubt as to how it will behave.

BIG APRICOT CROP.

It is not always safe to play the role of a prophet, yet it is tolerably safe at the present time to predict a good apricot crop the coming season. There was a light crop last year, which was the usual off-year, and we rarely have two poor years together. Then the cold season has so far kept the trees dormant that there is little fear that they will bud or blossom prematurely and the chances are therefore, that the fruit will set well and remain on the trees. At the present time the trees are well loaded with fruit buds, so that altogether the chances for a good apricot crop are favorable. Of course, there are many contingencies which may arise between now and the picking time which will reduce the crop, but as these are unknown and unforeseen they cannot count in our estimate of probabilities.

A Business Education.

Every young man or woman who is energetic understands that those having a good business training have a great advantage in life. Every one should have such an education in addition to their regular school training. It very often is the means of securing a good position on the start at a good salary and thus makes you more independent than where one has to start in without experience at a low salary.

The Pacific Coast Business College is offering through the columns of the Cultivator a course in business training in connection with their regular course which would pay any young man or woman to investigate.

Goat's milk should yield the strongest butter.

DEMAND FOR YOUNG PIGS.

Continued from page 215.

pigs are soon put off their food if it is left to sour under their noses. When weaned, three meals a day should be given, mixed to the consistency of thick cream. They should now have small, or what are called "pig potatoes," boiled and mashed, and added to the sharps. As they make their growth, a little corn meal may be added, but not much, as it is too heating for young pigs. Barley meal, peas and beans may also be given. Bran, because of its character of composition, cannot be considered as a wholly desirable food for porkers, and is best left out of the menu. Some breeders, following the dry feeding system, give a midday meal of crushed grain, or grain and peas mixed. Peas are, of course, a highly nitrogenous food. The one thing to keep in view is a steady "coming-on" condition in the pigs. There should be no backening whatever, nor need there be if they have a roomy, clean, well-littered sty, and are kept under healthy conditions, with regular feeding from the first.—Journal of Agriculture.

ALCOHOL FROM CORNCOBS.

The Department of Agriculture is developing a new industry in the production of alcohol from corncobs, which, it says, promises to be of much commercial value. Investigations are being made at Hoopeston, Ill., and have proved that the large quantities of corncobs which every year go to waste, can be made to produce alcohol in sufficient quantities to justify the erection of a distilling plant in connection with a corn cannery.

So far, the department has succeeded by simple methods of fermentation in getting a yield of eleven gallons of alcohol from a ton of green cob, and by similar methods in getting six gallons of alcohol from a ton of green cornstalks. A department official says that these tests show that there are 24 pounds of fermentable substance in a ton of green field cornstalks, which will yield about half of their weight in absolute alcohol. In round numbers, a ton of stalks will produce 100 pounds of alcohol or 200 pounds of proof spirits. As a gallon of alcohol weighs nearly seven pounds, there should be fifteen gallons in alcohol in a ton of stalks. The addition of the corn on the cob adds further to the possibilities of alcohol obtainable from a ton of cobs, and will have its influence in bringing the quantity to a greater figure.

BROOM CORN.

In comparison with many other farm crops of this country that of broom corn (Sorghum vulgare), is very small. The high prices that this product has occasionally-commanded, have caused many a farmer to undertake its cultivation without first counting the cost of production and inquiring into the causes governing the price paid for the brush. The ease with which the crop can be grown to harvesting condition and the fact that a fair crop is a third of a ton per acre make the industry apparently lucrative, even at the ordinary price.

The sudden increases in acreage when the price is high show that growers, influenced by the apparent prospect of large profits, are induced to plant extensively to this crop. It is not to be inferred from this that the amount of broom corn grown is the only factor governing the price.

The annual production is so small in comparison with that of the leading farm crops that the commodity offers an easy opportunity for speculation, which results in great fluctuation in prices.

The marked decrease in price which follows when the acreage planted is unusually large is due in a great degree to overproduction, but also to the production of brush of an inferior quality. Growers who plant large fields without an adequate knowledge of the broom-corn business and a thorough preparation for taking care of the crop are sure to produce a poor quality of brush.

The Association at Brawley has about 25 acres of tomatoes and several acres of cucumbers pledged for the coming season.

Citrus Deciduous Ornamental TREES Vines Palms Roses

And Every One True to Name

We Are Universal Providers for Orchards and Gardens

We do not confine ourselves to fruit trees alone, but grow also an immense assortment of ornamental trees and shrubs, climbing and trailing plants, palms for house decorations and outside planting, roses in tree and bush form.

APRICOTS

Write us for prices on Blenheim, Hemskirke, Royal and Tilton Apricots. The last named is one of the best canning, drying and shipping cots on the market today. Our stock of this later variety is exceptionally fine, and our prices will be sure to appeal to you.

PEACHES NECTARINES

Among the standards on hand still in quantities, we have Elbertas and Tuscan Clings, and other leading sorts in limited supply. Also a fine stock of Stanwick Nectarines, the leading variety, on which we are prepared to make special inducements.

APPLES AND PEARS.

The leading varieties are becoming depleted fast, but we still have the following standards in stock:—Gano, Jonathan, Smith's Cider, Yellow Newton Pippin, Lawver and Spitzenburg.

In Pears: Bartlett, Beurre Hardy, and Winter Bartlett.

CHERRIES.

We are still in the position to supply Bing, Black Tartarian, and Royal Ann Cherries, and are prepared to offer special inducements in quantities.

ALMONDS.

If you want any I. X. L., Drake Seedling, Ne Plus Ultra Nonpareil Almonds, we think we can make it worth your while to place your order with us.

Calimyrna Figs

Our Great Specialty

None genuine without our seal

GRAPEVINES

We can still furnish such leading wine grapes as Berger, Feher Zagos, Grenache, Sauvignon Vert and Trousseau, and in table and raisin varieties, Black Cornichon, Black Hamburg, Flame Tokay, Emperor, Thompson's Seedless. Also vines grafted on Phylloxera resistant roots and rooted Phylloxera resistant vines. Write for our complete surplus list.

CITRUS TREES.

If you want an assortment of varieties we can supply you with the leading kinds of Oranges, Lemons, Pomelos, Limes, Citrons, all grown in the great Thermal belt near Exeter, Tulare county.

OLIVES.

Our assortment of the leading oil and pickling varieties was never better. Our catalogue tells all about them.

BERRIES.

Mammoth and Loganberry plants. Extra fine well-rooted stock. The new Himalayan Giant Blackberry, introduced from Australia, is proving to be a great money getter in the San Joaquin Valley and the growers are enthusiastic over it. Stock limited. Price $10.00 per 100 for finely rooted tips.

ROSES.

We are still in the position to make up assortments of many of the leading and best sorts of roses. Let us send you a list of varieties still in stock.

BURBANK'S CREATIONS.

For the first time we are offering four of his latest and best creations, SANTA ROSA PLUM, RUTLAND PLUMCOT, PARADOX and ROYAL WALNUTS. Write for illustrated booklet telling all about them.

CATALOGUE AND PRICE LIST.

Our new catalogue is the finest book of its kind ever gotten out on the Pacific Coast. It is a compendium of valuable information and should be in the hands of every fruit grower and lover of the beautiful in nature. We also print a catalogue in Spanish. Catalogue and price list mailed on application.

OUR NURSERIES AND FARMS.

Roeding Place, 640 acres.
Nursery and Propagating Department Plant No. 2, 130 acres.
General Nursery, Plant No. 3, 320 acres.
Citrus Nursery and Citrus Orchards, Exeter, Tulare, county, 100 acres.

PAID-UP CAPITAL $200,000.00

Fancher Creek Nurseries

(INCORPORATED)

GEORGE C. ROEDING, President and Manager

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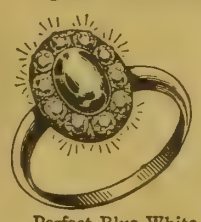

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No. 196, $120.00

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Flawless Blue White Diamond 14K Gold Hand Carved Tiger Claw Ring.
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FOR SALE CHEAP

We have decided to dispose of a lot of second-hand machines, which have been displaced by

THE PERFECTION

These machines are as good as the day they were installed by the original manufacturer. Of course we can't guarantee their reliability, but if you want one we will gladly sell it to you for less than the cost of the raw material. We have about fifty of these machines and among them being a large number of "Superiors"; so before purchasing another make of machine write us for prices, at the same time we will send you circulars describing the most perfect acetylene generator on the market, THE PERFECTION. Address

Crayton Mfg. Co., Inc., Eastman Bldg., Long Beach, Cal.

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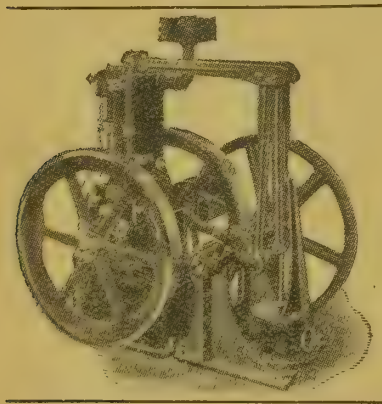
A Booklet, "The Whole Story About Wood Pipe," mailed free upon request.



A Handy Little Engine

Just the thing to run the feed cutter, the pump, the churn, the grinder, or anything on the ranch. It's well named

The Little Wonder

Write or call on

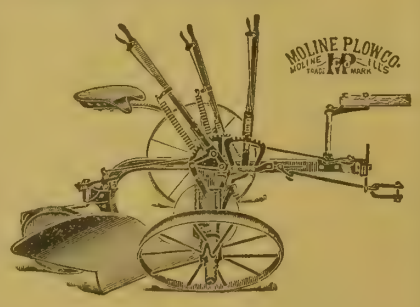
Wm. Gregory
602 No. Main St. Los Angeles, Cal.

30,000 FARMERS Bought Good Enough Sulky Plows

last season. Since its introduction the sales on this tool have increased rapidly from year to year until last season it required, in round numbers, 30,000 to supply the demand. This ought to interest a man who is going to buy a plow. It means that after due consideration 30,000 farmers agreed that the Good Enough is

"THE BEST PLOW ON EARTH FOR THE MONEY"

A MOST DESIRABLE AND ECONOMICAL FEATURE IS THE EASE WITH WHICH BOTTOMS OF DIFFERENT SIZES CAN BE FITTED TO THE SAME BEAM.



The Good Enough is extremely simple. It has the desirable features of up-to-date and high priced sulky plows without the complicated construction of the very high lift type. The land axle has a yielding spring—uneven ground does not affect depth of furrow. **Turns square corners either right or left.** The landing lever and swinging clevis permit the operator to change the land of the plow instantly without stopping the team or leaving the seat. It is furnished with pole attachment when ordered. Made right and left hand. Sizes from 10 to 18 inches. Bottoms for every condition. Will plow any soil that can be plowed with a moldboard plow.

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ASK YOUR DEALER TO SHOW YOU THE GOOD ENOUGH.

Send us your name and address, enclose four cents in stamps (to pay postage and mailing) and we will send you our

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The rain record for the season in San Benito county stands at 10.07 inches, only a few showers having fallen during the week, amounting to .12 of an inch. Same date last season 7.18 inches.

The artesian wells at San Felipe are developing enormous supplies of water this season. In most of the wells the pressure is sufficient to drive the water into the second stories of houses.

Household Department

WHEN I AM DEAD.

When I am dead, if men can say
"He helped the world upon its way,
With all his faults of word or deed
Mankind did have some little need
Of what he gave"—then in my grave
No greater honor shall I crave.
If they can say—if they but can—
"He did his best, he played the man,
His ways were straight; his soul was clean;
His failings not unkind nor mean.
He loved his fellowmen, and tried
To help them"—I'll be satisfied.
But when I'm gone, if even one
Can weep because my life is done
And feel the world is something bare
Because I am no longer there;
Call me a knave, my life misspent—
No matter, I shall be content.—E. C. W.

WON AT WHIST.

THE steamer had but a couple of days more before reaching port when the sun, which we had not seen since our departure, broke through the clouds and bathed us all in a delicious warmth. Something else burst forth at the same time—the sunshine, for me, of a face. She came on deck for the first time, and her dignified father put her in a steamer chair, arranged her wraps and sat down beside her like a shepherd dog beside a lamb. Perhaps he saw me looking at her. At any rate, that's what I was doing, for I couldn't keep my eyes off her. Such refined dignity, such repose, such gentleness! it must have all come in generations of gentility.

Why had the weather kept her below till the voyage was nearly finished? I must make the most of the brief period left to secure an acquaintance. Alas, the sun went down in clouds, and so did my hopes! She did not appear on deck again. I did not even see her leave the ship.

Winter came and the usual round of gayeties. An invitation—bridge whist at Mrs. Peabody's—came, among others, for me, and I resolved to accept.

On entering the card room the first face I set eyes on was the steamer girl. I was surprised an though delighted at my luck in meeting her again, pained to see her in the company. Mrs. Peabody is ultra-fashionable, and the people she entertains are very "smart"—that is, the women drink cocktails, smoke cigarettes and gamble. If you ask why I go with such people, I reply I am a man and can go anywhere without oiling the feathers of my angelic masculine wings, but had I a wife she should not go to Mrs. Peabody's.

I at once sought an introduction to the steamer girl, Miss Delaplain, and soon saw that she was out of her element. When a cocktail was handed her she started and declined it. I caught Mrs. Peabody frowning at her as she did so with an expression which being interpreted meant, "You don't get invited here again." Several young bloods had been chatting with Miss Delaplain when I was introduced to her, and they must have been putting on their up-to-date society manners, for she looked ruffled, and when I addressed her deferentially she figuratively nestled to me as one would cling to a lifeboat.

Miss Delaplain and I were at first partners. I saw at once that she knew very little about the game, and I soon suspected she didn't know she was playing for money. When we changed partners her new vis-a-vis soon made her aware of her temerity in playing a game she did not understand. At every misplay he would scowl at her and did not scruple to indicate that he was wroth.

After the evening's amusement I was about to take my departure when I met Miss Delaplain wearing a countenance that told of trouble.

"What shall I do?" she said. "I have been told that my loss at bridge whist is $105. I had no idea I was playing for money."

"And my gain is exactly the same amount. Though I knew that we were playing for stakes, I do not fel at liberty to accept my winnings.'

"Why so?"

"You for one did not know that you were risking anything. The money you lost may have gone to me. You are in an unpleasant position. So am I. There is a way out for both. Let me turn in my winnings to cover your loss."

There was no trouble in persuading here to accept the terms, at least temporarily, for she had no money with her, and she told me she would need to break the matter to her father, who would be greatly shocked at hearing that she had been gambling. I bade her good night after asking permission to call and, going to the hostess, paid her loss.

Two days later upon opening my morning mail I found a note from Mrs. Peabody inclosing a note and a check for $108 from Mr. Delaplain in payment of his daughter's loss at bridge whist. Mrs. Peabody called my attention to the fact that the amount was $3 more than the loss. I supposed this to be an error until, referring to Mr. Delaplain's note, I saw in a postscript on the second page, "The $3 is to cover the supper."

What should I do with this amount? It did not belong to me and was intended as a snub for Mrs. Peabody. Should I returns it to her, calling her attention to the snub? Such a crime would preclude the possibility of my attending any more entertainments at her house. I thought the mater over and concluded to accept the consequences. I enclosed a check for the surplus amount with Mr. Delaplin's note, underscoring the postscript with a blue pencil.

A week later I met Mrs. Peabody face to face on the steps of St. James' church. She gave me the dead cut.

My decision was more than one re-

FOR THE

RANCH

Khaki, corduroy and shawduck clothing for men and women; leather coats; rubber and oil skin suits; laced boots; rubber boots.

Tents; stack covers; wagon sheets; storm proof horse blankets; canvas mangers.

Fruit picking bags; feed bags; folding pails; heavy gloves.

Guns and ammunition.

Our new Outing Suit and Boot catalogue will be off the press Feb. 1st. Any of our 10 illustrated catalogues free.

THE WM. H. HOEGEE CO.
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138-140-142 S. MAIN ST.
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lating to Mrs. Peabody. It included the smart set of which Mrs. Peabody was a distinguished member. Something in the old fashioned demeanor of Miss Delaplain told me that if I adhered to the smart set I wouldn't be a fitting companion for her, and knew that after her first experience she would not get lost among them again. My withdrawal proved to be no loss to me, for in time I became engaged to Miss Delaplain. I was glad to be privileged to return in gifts the amount of my gain at the bridge whist, which I always claimed I had won from her. Besides the money, I won a wife.—Nathan White Howe.

YOUR BOY'S MANNERS.

Mothers make a mistake if they do not insist on good manners in the family. There is no reason why a boy should be boorish when his sister is polite, that a boy should be grumpy and awkward, ill at ease before strangers and unacquainted with table etiquette when his sister possesses the savior-faire of good breeding. We are talking about the growing boy. While he is still under your daily care, teach him to take off his hat when he meets you on the street, to rise when you enter the room, to place a footstool for his grandmother, and to carry any bundle or parcel not too heavy for small hands. A little fellow who is permitted to wear his hat in the house when only his mother and sisters are present cannot be expected to take it off because visitors have arrived.

"Freddie, why do you stand there with your hat on," asks the mother severely, when Freddie thus transgresses propriety, and the minister's wife or the lady from Baltimore or the aunt from Philadelphia is in the room. If Freddie had been taught always to stand bare-headed in the house, if it were his custom to pull off his hat whenever he met a lady or an older person of his own sex out-of-doors, the act would be automatic. Let your boy wait on you. Do not rush wildly to wait on him Let him button your shoes, put on and take off your rubbers, perform little services at home. If you are wise you will send him on errands to your friends, give him notes and messages to carry, and otherwise make him at ease when obliged to address some one he knows slightly.—Margaret E. Sangster in Woman's Home Companion for March.

When writing advertisers mention Cultivator

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2c a Pound

We sell at these prices to compel introduction of our "quality groceries." One order only to one family. Call for combination order No. 54U. Every item guaranteed or money back. Notice immense saving on every item. Good till March 10th.

50 Lbs. Best Granulated Cane Sugar. white and dry, finest made $1.00
4 cans any cream (milk) in market large size for 25c
10 bars Fairbanks Laundry Soap, for 25c
3 10c pkgs. Wheat Flakes, for 25c
10 lbs. extra large fancy Santa Clara Prunes worth 10c to 12½c lb. 70c
1 qt. $1.25 grade Pure Cal. Olive Oil, or 1 gal. jug best Tomato Catsup, or a tin of Pure Baking Powder, 2½ lb size (say which) $1.00
1-lb. tin 50c full wgt. Pure Mustard 39c
1-lb. tin, 40c full wgt. Pure Pepper .. 29c
1 pint best Fla. Extract, any flavor, worth $1.00 .. ..75c
2½ lbs. any 75c Tea, S. C. S. $1.25
2½lbs. Roast or Ground Pure, our 40c Mocha and Java Coffee..... 75c
1 Clothes Brush, strong and durable ..12c

Total for the lot unchanged $7.00

SMITHS
CASH STORE
NOW NO 14 TO 24 STEWART ST. S.F ONLY.
WHOLESALE MAIL ORDER RATES TO FAMILIES
WRITE US FOR PRICED CATALOG SAVES ⅓

DELIVERY—Free in city limits. Order by mail sent C. O. D. to your door daily. Express paid to Oakland, Alameda, Berkeley, San Rafael, Mills and Ross Valleys. Freight paid one hundred miles on this order only.

Your Political Duty.

It is your duty, if you are of age and a man, to vote at all elections, and to inform yourself beforehand what measure and men you ought as a good citizen to support.

It is your duty to act generally with some political party, and to exert your influence upon its leaders to induce the nomination of capable and honest men for office. And it is your duty if your party nominates a bad man, to vote against him, and thus keep the public and general good before your eyes, and set an example of true public spirit before your fellows.

If you have political rights of which, even by your own will, you cannot divest yourself, and which are therefore properly called inalienable, so you have political duties which also you cannot justly neglect or lay aside.

It is your duty to watch the conduct of public officers, to see that they perform their duties and observe their constitutional limitations; and if they do not, then it is your duty to help to expose them, and at the elections to punish them. For it is only by such vigilance that a nation can preserve its liberties unimpaired

It is your duty as an American citizen to obey the laws, even if they are, in your belief, unjust or unwise. It is your right to expose the folly and injustice of a law, to demand its repeal, and to try to get a majority to repeal it.

It is your duty to insist upon the prompt execution of the laws; to be convenience, to aid in their enforcement, if you are called upon by proper officers; and to resent with indignation every sign of lawlessness and violence, and require its vigorous suppression.

It is your duty, if you are a voter and qualified to serve when called on, as a grand or petit juror; and this at even great inconvenience.

It is your duty to serve in the militia, if the law commands it; and every American voter ought to have a sufficient knowledge of the manual and use of arms to enable him to act efficiently if called out to help put down a riot.

These are your political duties, which you cannot neglect or abjure without disgrace to yourself and harm to the country.

CALIFORNIA'S WORLD'S FAIR, 1913

California is to have a World's or International Exposition in the year nineteen hundred and thirteen, in commemoration of the four hundredth anniversary of the discovery of the Pacific Ocean by Vasco Nunez Balboa and to celebrate the completion of the Panama Canal. This exposition is to be held in San Francisco, the metropolis of the Pacific Coast, and the men of affairs from different parts of the State, who have gotten back of the proposition, expect the people of California to make it the greatest fair ever held. Its greatness will not necessarily consist of the vast acreage covered by the fair itself, for it has been demonstrated that some of the recent expositions have undertaken to cover too much ground. In the Pacific Ocean Exposition it is contemplated to take advantage of the mistakes of others, and to render it unique, and so interesting that people will be attracted to it from all over the world.

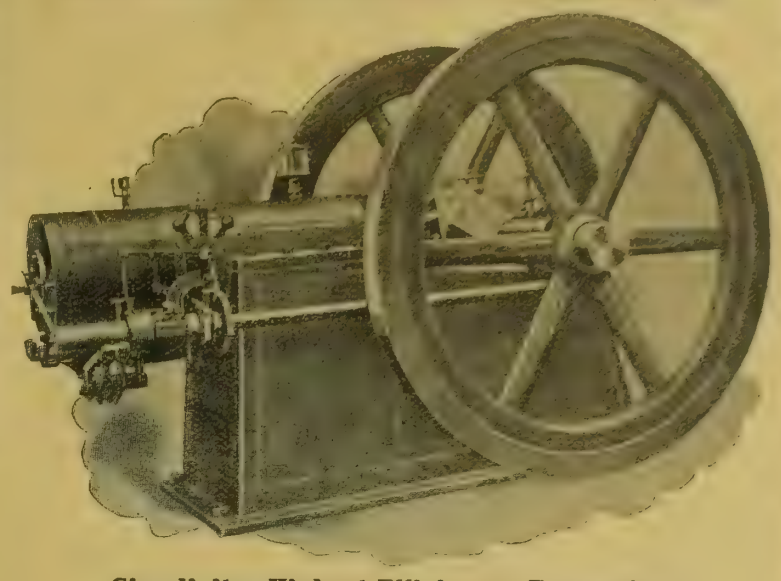
It is a matter of complete demonstration that the different expositions held in the United States have been of material advantage, not only to the nation as a whole, and the immediate localities where they have been held, but most particularly to the State in which the exposition was held. What has been demonstrated in other states will be fully realized in California, and, owing to the wonderful opportunities here, even better results may be safely anticipated to this State than those received by others. It is a foregone conclusion that most of the people drawn here by the exposition will take advantage of the opportunity of touring the State with the result that thousands will make their permanent homes here.

A movement has been started to build a wagon road from Milo to Lindsay, and the residents along the proposed route expect shortly to begin a canvas for funds with which to do the work.

There is a Reason why you should buy

Columbus Engines

Made by the Columbus Machine Co., Columbus, Ohio



Simplicity—Highest Efficiency—Economical
Highest Grade of Material—Best of Workmanship

They have been in the field over fourteen years.

Their output is one of the largest in the United States.

What does this mean? It means that the present standard they are maintaining on Columbus Engines is the result of fourteen years labor of experienced mechanics with one of the best equipped plants in the United States behind them, to produce an engine which is simplicity in itself.

Free from all complicated and trappy devices. It don't take an expert mechanic to see the simplicity and good points on the Columbus Engine over other makes.

It don't take an experienced mechanic to operate it. We carry complete stock at all times. Come in and let us show you.

Estimates given on complete pumping plants.
Correspondence Solicited.

Greenleaf Compton Co., Agents
121 So. Los Angeles St., Los Angeles
If you can't come write us and we will send our representative.

Polytechnic Business College
and School of Mines and Engineering
Oakland, California
Incorporated, Capital Stock $100,000.00.

The Great Business Training School of the West. Finest Building and Equipment in United States. National reputation for high-grade work. Graduates secure the best positions. Write for New Illustrated Catalogue.

New Term Beginning Now

Heald's Associated Colleges
Capitalization $250,000.00

Now include
Heald's Business College, 1451 Franklin Street, and
Heald's School of Mines and Engineering, 299 Locust Avenue San Francisco, California
Heald--Chesnutwood. Business College and Normal School, Fresno, California
Heald's Stockton Business College and Normal Institute, Stockton, California
Heald-Dixon Business College, Bacon Block, Oakland, California
Heald-Chesnutwood Business College. Santa Cruz, California

Colleges will be opened later in other cities. Send for New Catalogue.

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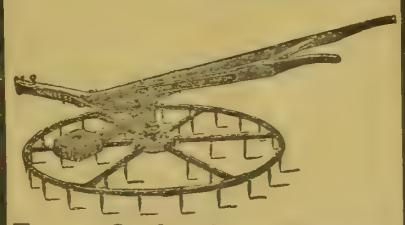
California Circular Rotary Harrow



For the Orchard and Vineyard

The California Vineyard Harrow rotates either way at the will of the driver. It is a perfect PULVERIZER, LEVELER, CLOD-CRUSHER and WEED-KILLER. Cleans itself at every revolution. Write for prices.

Pacific Implement Co.
131-153 Kansas St., San Francisco, Cal.

East San Gabriel Egg Ranch
S. C. WHITE LEGHORNS
BARRED P. ROCKS

Eggs for hatching $1 per 13 $5 per 100 We breed from two year old hens, and the best ones of the flock only. No stock for sale. Ranch two blocks south San Gabriel car line.

Swanson & Johnson ***San Gabriel, Cal.***

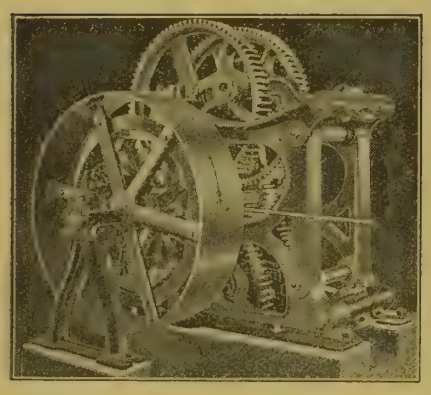
SILVER LACED WYANDOTTES
At the recent Poultry Breeder's Show we won eight ribbons on eight entries. "The best quality seen here for years, 1st cockerel has the best marked wing we have seen." —Pacific Fancier.
Eggs $1.50 per 15.

WHITE PLYMOUTH ROCKS
Grand laying strain, large vigorous stock, eggs especially recommended for incubator hatching, $1.00 per 15, $5.00 per 100, special mating $1.50 per 15.

FAIRVIEW POULTRY YARDS
A. E Nelson, ***El Monte, Cal.***

When writing advertisers mention Cultivator

The Pomona Pumps Are Best



for City Waterworks and Irrigation

BECAUSE—

Using machine cut and slow running gears, they are

PERFECTLY NOISELESS.

They use stepped gearing with no break in the tooth contact, doing away with all rattle and vibration.

BECAUSE—

They have an ideal motion of the pump rods, which consists of a uniform continuous slow up motion, a smooth, quick down movement with absolutely no jerk in starting the rods upward eliminating all rod breakages and valve troubles.

BECAUSE—

They will save you money in cost for power. We use machine cut gearing which alone saves ten per cent. We have a leverage in our gearing which other pump makers do not have and which they do not tell you about when trying to down us.

BECAUSE—

In pumping through long pipe lines, they deliver a continuous steady stream.

They do not hammer out your pipe line by irregular pulsations of the water column.

They save power by keeping the water in continuous motion.

BECAUSE—

They are fitted with improved oiling devices that can be filled without stopping. Pumps may run for weeks continuously.

BECAUSE—

We have advantages in our pumps that investigators appreciate at once, consequently, where one goes others follow and we are fast taking the country.

BECAUSE—

We give a guarantee of satisfaction with every plant.

Send for catalog.

Pomona Manufacturing Company

Makers

Pomona, California

The Produce Markets

Los Angeles Markets

LOS ANGELES, Feb. 27, 1907.

Butter

The butter market is much easier at the lower prices. The feed product is moving out rapidly, which is always the case when the price comes within the reacch of all.

Valley Creamery	62½
Coast, fy,	60
Cooking	23

Cheese

There is a more abundant supply of cheese arriving, 62,000 pounds coming in yesterday.

Cal Young American, per lb.	18½
California Anchor	18
Cal 3-lb. hand	19½
Northern	17
Domestic Swiss	20
Imported Swiss	29

Eggs and Poultry

There was a slight weakening in the egg market today and prices were reduced one cent.

Eggs, local, per doz.	21
Northern candled	20
Fresh Eastern	18

The following are average prices which dealers pay to producers for live weight:

Hens, per lb.	14
Young Roosters, per lb	16
Fryers	16
Broilers, per lb	18
Old Roosters	8
Turkeys	15
Geese	12
Ducks	12

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lb	7.50
Prime Steers.	5
Heifers	4
Calves, per lb	5
Sheep, ewes, per head	5.25
Lambs, per head	7.50
Wethers	5.50

Potatoes

The potato market practically went to pieces this morning, brokers selling to the jobbers as low at $1.45 per hundred for fancy Colorado spuds, but at this point several of the largest produce dealers stepped in and bid $1.45 and $1.50 for any quantity. This greatly stimulated the market and renewed confidence among the other dealers, who then showed a willingness to buy.

Salinas	2.50
Burbank, Local	2.25
Highland	2.25
Sweets. Yellow, per sack	3.75@4.00
Colorado	1.65
Minnesota	1.70

Vegetables

Green vegetables were plentiful and the sales of many varieties were slow. Cabbages and lettuce were particularly weak, selling as low as 70 cents and 75 cents.

Asparagus, lb.	20
Beets, per doz	40@60
Bell Peppers, Green, lb	5
Cabbage, sack	75
Chili Peppers, Green	6@7
Chili, Dried, per lb	25
Cucumbers, per doz	1.50@1.75
Cauliflower, per doz	40@75
Carrots, per doz	40@60
Celery, per doz.	40
Egg Plant, per lb	15
Garlic per lb	6
Green Onions, doz. bunches	25@30
Lettuce, per crate	50@1.00
Lima Beans, per lb	7@8

Receipts of onions were light and the market was a trifle weaker on account of the heavy arrivals.

Onions, Aust. Brown, sk	135@1.50
Onions Y. Danvers	1.35@1.50
Parsnips, per doz	35@50
Rhubarb, per lb	6
Radishes, per doz	15@20
String Beans, per lb	8@12
Sugar Peas, per lb.	3@4
Turnips, doz bunches	40@60
Tomatoes, per box	75@1.25
Wax Beans, per lb	16@18

Citrus Fruits

Lemons	2.00
Valencias	1.50@2.00
Navels	1.25@1.50
Grapefruit Seedless	2.00@2.50
Grapefruit seedlinggs	1.25@1.50

Fresh Fruits

Apples, Bellefluer, per box	100@1.35
Apples, Ben Davis	1.40@1.50

Dried Fruits

Evap. Apples, fancy, per lb	9
Apricots	18
Peaches	15
Pears	12@13
Prunes, fy,	5@8

Beans, Dried

Limas, No. 1, per cwt	5.50
Pink No. 1	2.65@2.75
Lady Washington	2.90@3.00
Small White	3.25@3.40
Black Eyes	4.50@4.70
Garvanzas	4.25@4.50

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb. cans, lb.	7½@8
Extracted, white	7½
Light Amber	7
Comb, water white, 1-lb fms	16
Light Amber	14
Beeswax	25

Nuts

Almonds, new, per lb.	19@20
Peanuts, Virginia	7
Peanuts, California	6½
Walnuts, No. 1, S. S.	14@15

Hay

Barley, No 1	1..50@16.00
Barley, No 2	11.00@12.00
Alfalfa, Local, per ton	14.00@16.00
Plain Oat Hay, No. 1	18.00@20.00
Plain Oat Hay No. 2.	9.00@15.00
Wheat No. 1	14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, No. 1, per cwt.	1.40
Barley (to producer)	1.00@1.05
Rolled Barley	1.30
Corn, per cwt.	1.40
Cracked Corn	1.45
Feed Corn Meal	1.45
Shorts	1.45
Bran	1.30
Oil Cake Meal	2.75
Cocoanut Meal	1.50

San Francisco Markets

SAN FRANCISCO, Feb. 26, 1907.

Butter.

California, ex. per lb	32
California, firsts	31
California, seconds	28
Packing Stock	23

Cheese

New California, fancy	14
Cal. Young American, fancy	15

Eggs and Poultry

Fresh Ranch Eggs	20
Eggs, first, per dozen	18
Hens, per doz., small	5.00@5.50
Hens, large	600@7.50
Young Roosters, large	6.00@8.00
Young Roosters, small	4.50@5.50
Old Roosters, per doz	4.00@5.00
Fryers, per doz	5.50@6.00
Broilers, per doz.	3.00@4.00
Ducks, young	6.00@8.00
Geese; per pair	2.00@3.00
Turkeys, per lb	19@22

Live Stock

Steers, No. 1	8@8½
No. 1 Cows and Heifers	6@6½
Hogs, 80 to 130 lbs.	7½@8
Hogs, 250 to 350 lbs.	8
Calves, per lb	5@5½
Lambs, yearlings	6½@7

Potatoes

Oregon Burbank	1.45@1.75
Salinas Burbanks, ctl	1.50@2.00
Rivers	1.50@1.65
Sweet Potatoes, ctl	2.75@3.00

Vegetables

Cucumbers, per doz.	1.00@1.25
Chili Peppers, Green lb	8@12
Egg plant per box	3.00@3.50
Green Peas, per lb	10@15
Summer Squash, large crate	1.50@1.75
Onions, Red, per sack	1.00@1.25
Onions, Yellow	1.00@1.25
Peppers, Green, Bell	40@75
Rhubarb, per lb	7@10
Summer Squash, large crate	2.00
String beans	15@17
Tomatoes	1.50@2.25
Wax Beans	15@17

Citrus Fruits

Seven or eight carloads of oranges arrived in addition to a liberal quantity by steamer from San Diego. The bulk of the recent large offerings has been in rather poor condition and with large sizes predominating. Owing to the general softness of the oranges now in market sound culls have been going at or about top prices. Lemons were unchanged and slow and there was hardly any demand for grapefruit.

Lemons	75@2.50
Navels	1.00@2.00
Seedlings	1.50
Grapefruit, seedlings	1.00@1.50
Grapefruit, seedless	2.00@3.00
Limes	3.50@4.00

Fresh Fruits

Apples, fancy, per box	1.00@2.00
Apples, common, per box	75@1.00
Pears, Winter Nelis	1.75@2.00
Prunes, per box	60@85

Dried Fruits

Apples (evap.)	7@8
Apricots, per lb	16@20
Figs, white	2½@4
Muscatels (loose)	7@8
Prunes	2@2½
Peaches	10@12½
Raisins, seeded (1906)	8½@10
Thompson, unbleached	7½
Thompson, bleached	9@11

Beans and Seeds

Limas, No. 1	4.25@4.40
Pink	1.95@2.10
Large White	2.25@2.50
Small White	2.80@2.95
Black Eyes	4.50@4.65
Red Kidneys	3.40@3.75
Bayo	2.00@2.30

Hops

1906 Crop (future lb.)	10@12½

Nuts

Almonds new	17½
Peanuts, Viginia	6½
Peanuts, California	5½@6
Walnuts	15@16

Honey

Clear White Comb	16½
Amber	14@15
Extracted	5½@7

Hay

Alfalfa, local	10.00@13.00
Oat	15.00@18.00
Wheat No. 1	19.00@22.00
Wheat, No. 2	13.00@16.00

Grain

Wheat No. 1	1.27@1.28
Barley No. 1	1.12@1.15
Corn, small yellow	1.50@1.55
Corn, yellow	1.27@1.30
Oats. White	1.45@1.55
Oats, Red	1.30@1.75
Ground Barley, per ton	24.00@25.00
Bran, per ton	20.00@22.00
Straw, per bale	60@80
Feed Corn Meal, per ton	32.00
Cracked Corn per ton	32.00
Oil Cake Meal, per ton	38.00
Cocoanut Meal, per ton	25.50
Calalfa Meal, per ton	21.00
Mealfalfa, per ton	21.00

Citrus Market

New York Market.

Feb. 26.—The market is very steady and higher in spots on navels than it has been for a few days past when unfavorable weather caused a depression. Unchanged on lemons. Nineteen cars oranges and two cars lemons sold.

New Muskmelon

The new muskmelon pictured and described on the Cultivator cover of Jan. 10th is handled exclusively by

JOHNSON & MUSSER SEED CO.

113 N. Main St., Los Angeles, Cal.

50c per packet, $2 per ounce

ESTABLISHED 1883

Geo. B. Warner Orange County Nurseries

Grower and Dealer in Citrus and Deciduous Trees of All the Standard Varieties

Grafted Walnut Trees a Specialty. Budded Loquats, Roses, Grape Vines, Berry Plants, Cypress, Etc. Street and Ornamental Trees, Shrubbery, Blue Gums. Only clean, healthy stock offered

Residence, 202 E. Tenth St. Telephone S. S. Red 92. Santa Ana, Cal.

Strawberry Plants TROPICO BEAUTY BRANDYWINE

$2.00 per 1,000, f. o. b.

Lots of 20,000 or more, $1.75 per 1000, f. o. b.

Lots of 100,000 or more, $1.50 per 1,000, f. o. b.

For Sale by the Grower,

D. Griswold Tropico, Cal.

Strawberry PLANTS

Headquarters For The

Burbank Beauty

A real beauty and the earliest and most vigorous of all strawberries. A good table berry and will ship further than any other berry. $3.00 per thousand.

Brandywines—The old standard variety of the southwest. Can fill orders by the thousand, hundred thousand or million. $2.00 per thousand. Plants carefully packed and we guarantee their arrival in good condition.

FAIRVIEW FARM NURSERY

G. H. HOPKINS, Prop. BURBANK, CAL.

NAVELS— AV.
Blue Banner, ex f, Pioneer F't Co..$2.05
Mocker, o r, Spence Fruit Co.....1.95
Sweetheart, ex f, Riverside F't Ex.2.65
Blue Seal, ex f, A.C.G. Ex. Azusa..2.20
Golden Rule, ex c, Riverside F't Ex.2.45
Iris, ex f, D. M. Fruit Ex.....1.90
Violet. ex ch, D. M. Fruit Ex.....1.95
Golden Rule, ex c, Riverside F't Ex.2.40
Quail, ex ch, O. K. Fruit Ex. 2.05
Eagle, st, Riverside F't Ex. 2.55
Badger, ex f 2.55
Poinsettia ex f 2.00
Wildflower, ch 1.55
Orchard T. I., Nat'l Orange Co....3.15
Standard, T. I., Nat'l Orange Co...2.75
Orchard, or r, Nat'l Orange Co....2.85
Standard, st, Nat'l Orange Co.....2.45
Lion Head, T. I., I. L. Lyon & Sons.2.75
Tiger Head, T.I., I.L.Lyon & Sons.2.60
Gypsy Queen, ex f, Moulton & Greene 2.45
Carnation, ex ch, Moulton & Greene.1.90
Mt. Harrison, ex f, F. L. Sewell..2.70
Mt. Harrison, ex ch, F. L. Sewell .2.55
Rossmoyne, or r, E. M. Ross 2.30
Lion Head, ex f, I. L. Lyon & Sons.2.55
Tiger Head, T.I. I.L.Lyon & Sons ..2.60
Rose, T.I., Redlands O. G. Assn...2.70
Clover, T.I., Redlands O. G. Assn...2.55
Clover, ex ch, Redlands O. G. Assn..2.35
Jayflower, Richardson, Fullerton...1.95
Buena 1.85
LEMONS— AV.
Canna ex ch S. B. Ft. Ex.....3.20
Plain End. st S. B. Ft. Ex.....2.50
Antler f P. & N., Highland.....2.80
Antler ch P. & N., Highland.....2.60
GRAPEFRUIT HALVES— AV.
Mt. Harrison f F. L. Sewell 75
TANGERINE HALVES— AV.
Lucile 2.00
Bear ex f O. K. Fruit Ex.....1.80
Tiger Head ex ch I. L. Lyon & Sons.2.00
Lion Head ex f I. L. Lyon & Sons..1.85
MANDERIN HALVES— AV.
Lucile 1.40

Pittsburg Market.

Feb. 25—The lemon market is good on firm stock. The weather is favorable. Eleven oranges and two lemons sold today.

NAVELS— AV.
Red Shield ex ch A. C. G. Azusa ..$2.20
Green Crown st A. C. G. Ex Azusa.1.80
Green Crown T I A C G Ex Azusa.1.80
Stag T I A C G Ex Lateen Spur..1.55
Pointer ex ch A C G Ex Lateen S..2.00
Emergency 2.30
Hiawatha ch Zante Cit Assn.....2.30
La France ch J S Kuns Co.....1.65
Climax or r E Pycke & Co 2.20
Climax or r E Pycke & Co 2.20
Lochinvar ex ch R. H. E. Highl'ds 2.35
Belt st R. H. E Highl'ds 2.20
Orchard or r Nat'l Orange Co 2.70
Standard st Nat'l Orange Co 2.35
Blue Banner ex f Pioneer Ft Co 2.40
Pioneer ex ch Pioneer Ft Co 2.30
Mountain Lion f Speich & Co.....2.50
Mountain Lion f Speich & Co.....2.55
Tourist st Spence Ft Co.....2.35
Square Deal 2.05
LEMONS— AV.
Pyramid or r Strachan Ft Co....$2.95
Harbor c Chas. Monike 3.05
Standard st Chas. Monike 2.65

Boston Market.

Feb 25.—The market is advancing and the weather is favorable. Twenty-six cars sold today.

NAVELS— AV.
Alpha ex f Riverside Ft Co.....$2.80
Elk ex ch Riverside Ft Co.....2.70
Whittier f Redlands Junction 2.75
Whittier ch Redlands Junction....2.55
La Verne La Verne Cit Assn.....2.55
La Verne Home La Verne Cit Assn.2.45
Crafton f Crafton O G Assn.....2.25
Trophy ex f C. C. Assn.....2.10
Geranium ex ch C. C. Assn.....2.10
Laurel f Q. C. Ex Corona 2.65
Lily Q. C. Ex Corona 2.50
Quail ex ch O. K. Ex Upland.....2.30
Orchard or r Nat'l Orange Co 2.80
Standard st Nat'l Orange Co.....2.65
Independent f Highland Dist.....2.65
Independent ch Highland Dist.....2.55
Independent ch Highland Dist 2.60
Partridge ex ch C. C. U. 2.30
Signal ex f Stewart Ft Co 2.15
Warrior ex ch Stewart Ft Co 2.05
Pine Cove ex f S H Ex Highland..2.75
Overland ex R. H. Redlands.....2.45
Whittier ex ch S. T. Ex Whittier ..2.35
LEMONS— AV.
Canna ex ch S. B. Ex Yerkes $4.00
Plain End st S. B. Ex Yerkes 3.60
Standard st Highland Dist.....3.20
Laurel (bloods) Q. C. Ex Corona..3.20
Independent f Highland Dist 3.75
Independent ch Highland Dist 3.45
Orchard Run or r Highland Dist ..3.40
Princes (bloods) Q C Ex Corona..3.15

Philadelphia Market.

February, 25.—The market is advancing on navels and weaker on lemons. Eight navels and three lemons sold today. One thousand boxes of Jamaicas sold at from $2.35 to $2.50, averaging $2.40. Ten cars Florida sold. The weather is cool.

NAVELS— AV.
Brown Keystone fy King Ft Co ..$2.45
Red Keystone ch King Ft Co 2.35
Native Son st King Ft Co 2.60
Hiawatha ch Zanta Citrus Assn 2.50
Golden Rule ex ch Riv. Ex. 2.75
Parrot ex ch S. A. Ex. Walnut 2.20
Hawk ch S A Ex. Walnut 2.20
Carlo st S A Ex., Walnut 2.05
Lordsburg T I Lordsburg Dist. ..2.55
Lordsburg o. r. Lordsburg Dist ..2.30
Blue Banner, ex fy Pioneer Ft Co ..2.35
Pioneer ex ch Pioneer Ft Co 2.50
Fiesta ex ch Riverside Ex. 2.40
Lochinvar ex ch R. H. Ex E High. 2.55
Pointer ex ch A. C. G. Lateen 1.85
LEMONS— AV.
Harbor ch Chas. Mohnike $1.20
Standard st Chas. Mohnike 1.45
Peyton Val Peyton 2.75
Trail ch S. T. Ex Lamanda 3.00
Canon st S. T. Ex Lamanda 2.65

St. Louis Market.

February 25.—The market is firm on good stock. Six cars sold today and eight on tracks. The weather is favorable.

NAVELS— AV.
Golden Flower, ex fy R. O. G. A. $2.45
Golden Gate, ex ch R. O. G. A. 2.15
Pointer ex ch A C G Lateen Spur 2.00
Pointer T. I. A C G Lateen Spur ..1.95
Humming Bird o. r. Riverside Ex 2.25
Riverside o. r. Riverside Ex 1.95
Uncle Sam ex fy Riverside Ex 2.35
Fiesta ex ch Riverside Ex 2.35
LEMONS— AV.
Standard st Chas. Mohnike $2.85
Lemonade st 2.35

Cleveland Market.

February 25.—Prices low on account of quality of fruit. The weather is favorable. Ten cars sold today.

NAVELS— AV.
Carmencita ex ch S. T. Ex $2.10
Colombo st S T Ex. 1.80
Parrot ex ch S. A. Ex 2.35
Hawk, ch S. A. Ex 2.05
Whittier ex ch S. T. Ex 2.95
Pico st S. T. Ex Whittier 2.65
Royal Knight ex fy R. H. Ex 2.50
Newsboy ex ch R H Ex 2.00
Rose ex fy R. O. G. A. 2.40
Clover ex ch R. O. G. A. 2.05
Native Son, st King Ft Co 1.90
Valle Vista st Sutherland Ft Co ..1.90
Hacienda ex ch Penn Ft Co 1.85
Troubador st Penn Ft Co 1.70
Vacation 1.80
Lucky ch E E Wilson 1.45
LEMONS— AV.
Swan ex fy R. H. Ex Red. $3.20
Golden Sceptre o. r. Rialto O. Co 1.70
La Belle, st Rialto O. Co 1.55

Cincinnati Market.

February 21.—The market is steady and weather favorable. Ten cars on tracks.

NAVELS— AV.
Lion Head ex fy I L Lyons Sons $2.75
Wild Flower ex ch C C U 1.85
Parrot ex ch S. A. Ex 2.20
Victor st S. A. Ex 1.90
Pet ex ch S. A. Ex 2.10
Duck st S. A. Ex 2.15
Alhambra ex ch S T Ex 1.65

Citrus Fruit Shipments.

LOS ANGELES, Feb. 26.—Monday, February 25 (Santa Fe only) 39 cars of oranges; 19 cars of lemons.

Total to date this season, 7379 cars of which 922 cars are lemons.

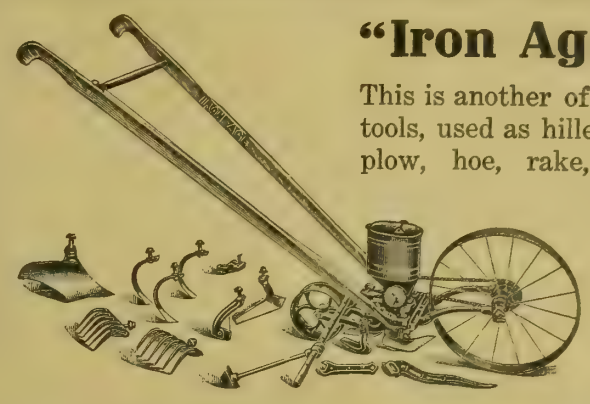
Total to same date last season 9065 cars of which 1036 were lemons.

High Priced Fertilizing.

Mr. C. W. Leffingwell, Jr., of East Whittier, one of California's most successful lemon growers, has probably bought the highest-grade fertilizer ever sold in California. Mr. Leffingwell purchased some fertilizer from the Agricultural Chemical Works of Los Angeles for $95.00 per ton. Mr. Leffingwell, with his usual ability to figure, sees that in high grade goods he saves handling and freight. This is surely an age of concentration.

EGGS Ringlet Barred Rocks $1.50 and $2.00 per sitting 15. Black Minorcas (Albert strain) $1.50, and $2.00 per sitting 15. Mammoth Pekin Ducks $1.00 and $1.50 per dozen.

EDWARD A. HALL, WATSONVILLE, CAL.



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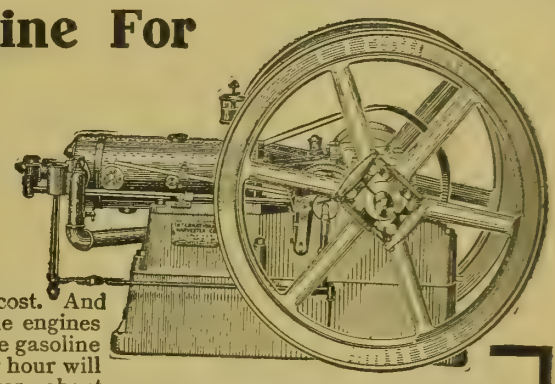

WHEN you buy an engine for irrigation pumping you don't want to get one that will require an engineer to run. What you want is an engine that will practically run itself for hours at a time. One that is sure and safe and steady, one that is simple in construction, and easily understood and operated.

I. H. C. Gasoline Engines are that kind, and for that reason are especially adapted to pumping for irrigation. A small boy can look after an I. H. C. Engine, and run it as successfully and economically as anyone. Look it over once or twice is all that's necessary in a day's run.

Now, what else do you want in an engine for irrigation pumping?

Economy—To be sure, you want an engine that will pump the largest amount of water at a small cost. And here again I. H. C. gasoline engines fill the bill. Ordinary stove gasoline is the fuel, and the cost per hour will be about 1½c per horse power—about 45c a day for a three-horse power engine working 10 hours. That's cheap enough isn't it? And convenient. You can buy gasoline by the barrel, and always have plenty of fuel on hand.

Durability—Because I. H. C. engines are simple and strong in construction, they are durable, too. There's nothing much about them that can wear out. Repairs are small and inexpensive; parts can always be readily obtained, and you can replace them yourself.

Ease of Operation, Economy, Durability—these are three good points that help give I. H. C. gasoline engines a superiority over others.

If you are now using any other power, or if you are planning to pump for irrigation this year, go to our local agent and examine these famous engines. They are made in various styles (Vertical and Horizontal, Stationary and Portable) and in sizes ranging from 2 to 20-horse power. During the seasons when not in use for pumping they can be made to serve in a hundred other ways.

Call on our Local Agent or write nearest general agency for illustrated catalogue.

Western General Agencies: Denver, Colo., Portland, Ore., Salt Lake City, Utah, Helena, Mont., Spokane, Wash., San Francisco, Cal.

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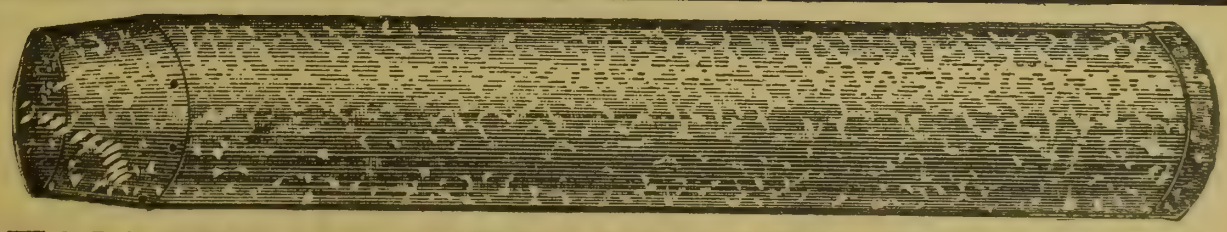

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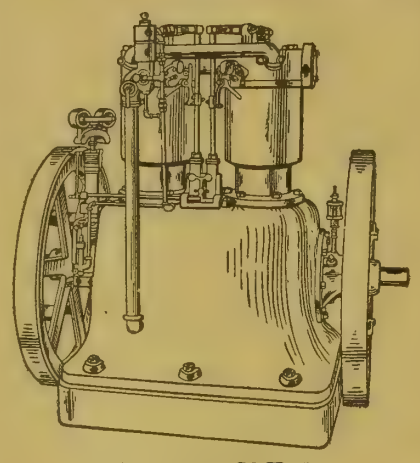

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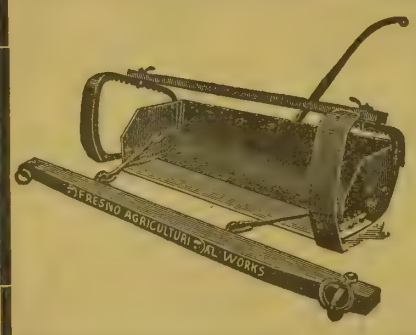

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Our competitors all use the name Fresno to help sell thir scrapers, acknowledging the superiority of the Fresno. We make the only GENUINE FRESNO SCRAPERS.

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Centrifugal Pumps
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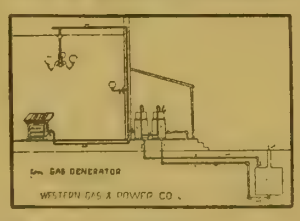
WESTERN GAS GENERATORS



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AUTOMATIC SAFE ECONOMICAL.
Read what Mr. A. W. Foster, President of the California Northwestern Railway has about them:
Gentlemen:
Replying to yours of the 20th inst., I would state that the plant installed for me by the Western Gas and Power Company, on my Hopland Stock Farm, is giving entire satisfaction, and I cannot speak too highly of it. Yours truly, A. W. Foster.
Mr. Foster used an acetylene gas generator before we installed our Western.

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For further information, write

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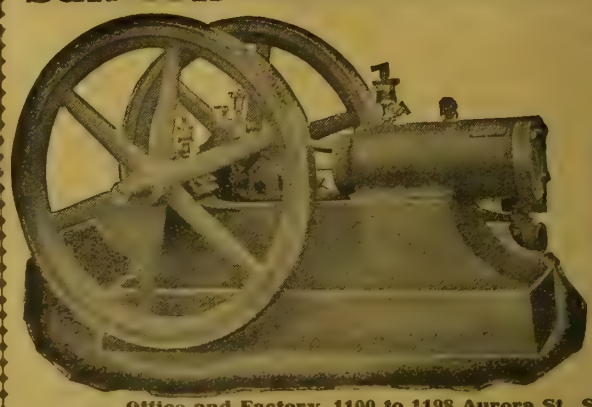

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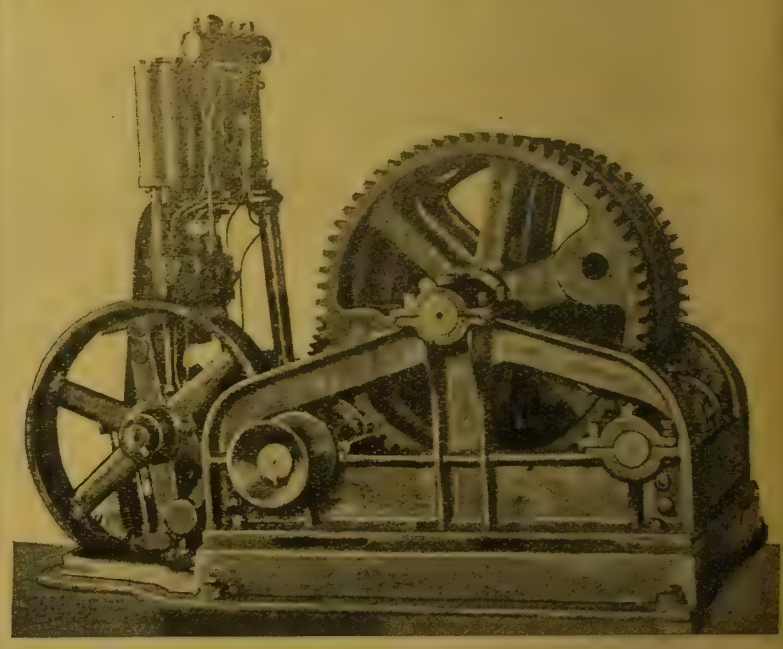
Addison Double Plunger Pump Head



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Pomona, Cal., Jan. 7, 1907.

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We use a gasoline engine developing about 16 H. P.
We think we have made no mistake in selecting the ADDISON.
Yours very truly,
MARTIN BROTHERS
Pomona, Cal.

It will pay you to investigate the Addison before purchasing a pump. Send for Catalogue B.

Addison Pump Company

Phones: Home 91; Sunset, Black 1561 Cor. 1st and Cypress Sts., Pomona, Cal.

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You can burn 100,000 cubic feet of air with every 130 gallons of oil; this means perfect combustion. To burn more than 100,000 cubic feet of air with 130 gallons of oil, there is a decided loss of heat. To burn less than 100,000 cubic feet of air there is a loss of fuel.
The only safe and reliable burner on the market.
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California Cultivator

Los Angeles March 7, 1907 San Francisco

The Twentieth Century Pumping Plant

A High Grade, Modern Equipment for Raising Water in Large Volume in Which Simplicity, Efficiency and Economy Form a Perfect Trinity

Courtesy WESTERN GAS ENGINE COMPANY

THE SANTA ANA VALLEY IRRIGATION COMPANY claims to have one of the most economic, powerful, and altogether satisfactory pumping plants ever installed in Southern California, which runs as smoothly as a watch while raising 400 miners inches of water a minute.

It is stationed on the Santa Ana river twelve miles up the stream from the little city of Orange and anyone visiting that section will be cheerfully shown over the entire plant, for the company show a pardonable pride in calling attention to the fact that they have a beautiful and perfect piece of mechanism, that ticks away with the unswerving regularity of a pendulum, in the fine 60-horse-power gas engine that lifts the water.

The water supply is furnished by five 12-inch wells in a line, each 80 feet deep and 75 feet apart. Each is connected with the others by a 10-inch suction pipe attached to an 8-inch pipe in the respective wells, so that the water is pumped simultaneously from all the wells.

This pipe is in a tunnel or trench 8 feet wide and 29 feet deep and the wells are so piped that the water may rise the full height of the tunnel. Before the pumping begins the water is at least eight feet above the pipe during the driest part of the year. The tunnel is lined with close fitting plank, to preclude the entrance of sand, and is strongly and firmly braced.

At one time during October last, the pump was run continuously for 36 hours and the water in the trench was diminished only ten feet and the Board of Directors are enthusiastic at the unmistakable success of their enterprise. They feel that they are always assured of an abundance of water for their great ditch, which furnishes water for the irrigation of about 17,000 acres in and about Orange, Santa Ana and Tustin and are more than satisfied that the $10,000 spent for the installation of the plant has been their most remunerative investment.

It is noteworthy that the entire plant is the product of California industry.

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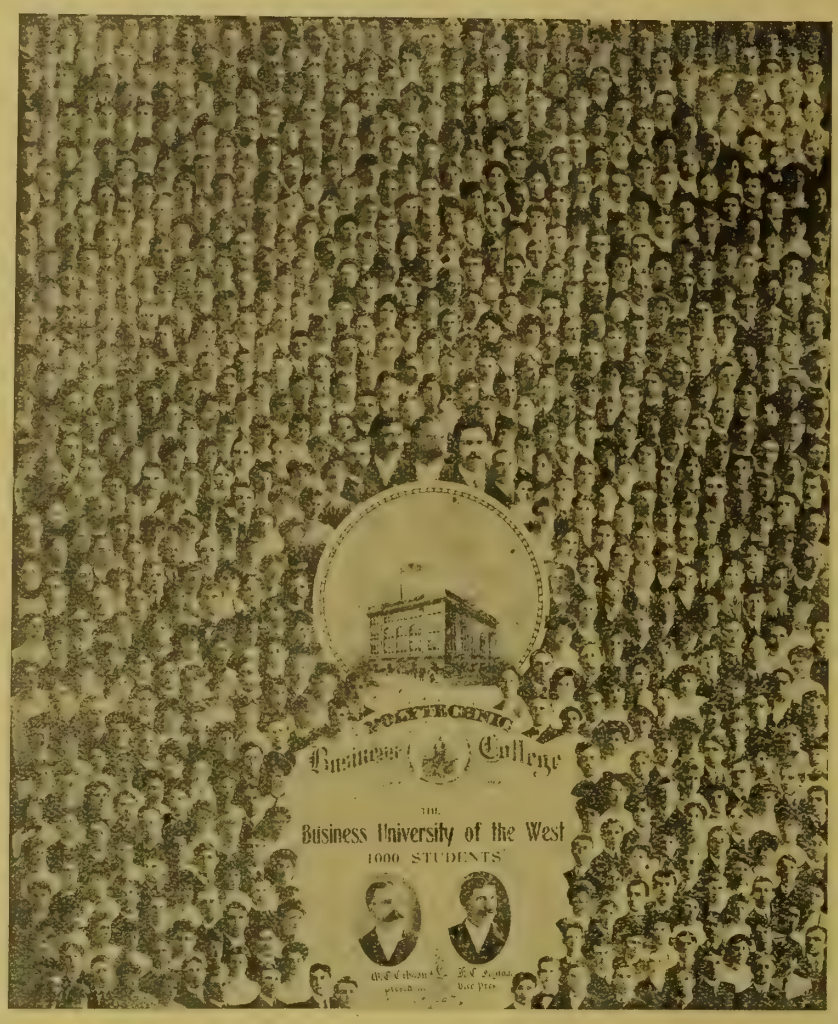

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- Equipped on the scale of elegance and expense never before attempted in California.
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- Thirty teachers—giving the most careful individual supervision and instruction.
- 100 new typewriting machines. The largest typing department west of Chicago.
- Has the finest and most complete banking and busines offices in the United States.
- Faculty is composed of the best teaching talent the country affords.

THE POLYTECHNIC has five times more money invested in equipment than any other Business College in the West.

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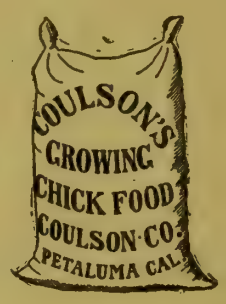
Coulson's Growing Chick Food



Coulson's Growing Chick Food is a balanced ration of cracked grains, seeds, mill feeds, meat and bone meals, carefully mixed according to a formula which has been compiled only after much experimenting.

It contains everything that a young chick requires up to three months old, and can be fed either from the commencement, or to gradually supersede **Coulson's Special Dry Chick Food**, say four to six weeks old.

Flock of three-months-old pullets fed on **Coulson's Special Dry Chick Food**, and afterwards on **Coulson's Growing Chick Food.**

It can be fed until the chickens are three months old, when you can commence feeding **Coulson's Improved Mash Egg Food.**

When making the change from **Coulson's Special Dry Chick Food** to the **Growing Chick Food**, it will be found best to do so gradually, changing one meal at a time.

If you will feed **Coulson's Growing Chick Food** to the chicks they will be fully nourished, and they will enjoy their feed. In consequence they will grow rapidly, and mature quickly.

ASK YOUR DEALER FOR IT.

One of Our Numerous Testimonials

"I tried **Coulson's Growing Chick Food** exclusively the first year in the business, on Brown Leghorns. Sold the cockerels as broilers at 9 weeks old, weighing 2 pounds, 3 ounces each.

"I tried my own mixture of food the next year, and took the same care of the chicks, as near as I knew how; and sold 75 cockerels as broilers, weighing 1¼ pounds each at same age.

"Having tested at my own expense the two methods, I have concluded the **COULSON FOOD** is superior."

MANUFACTURED BY

Coulson Poultry and Stock Food Co. Petaluma, California

California Cultivator

Vol. XXVIII—No. 10 Los Angeles, California, Thursday, March 7, 1907 Subscription $1 a Year

Bacteria in the California Home

Suggestions as to the Best Ways and Means of Preventing the Development of Those Antagonistic to Human Life

By MINNA E. SHERMAN, Fresno, Cal.

THE majority of these minute members of our households are good and indifferent, while a few only are very bad. The good bacteria are useful friends, the bad ones are enemies that must be controlled, while with the indifferent ones we are not concerned. The science of housekeeping consists in keeping at a minimum the bacteria that are dangerous to health.

The Troublesome Bacteria.

While it may be less pleasant, still it is best to consider the bad or troublesome bacteria first, to impress on the mind how really dangerous they are to health. The mother is usually the nurse at the bedside of loved ones, even in these sad hours it is a relief to the burdened heart if the disease has not been brought into the house by carelessness or neglect of sanitary laws. That bacteria causes many diseases we postively know, for we can test the matter by cultivating the bacteria under suitable conditions of warmth, in boullion or starchy compounds and then by injeting a dilution of the culture into the veins of lower animals, produce the characteristic disease. It is not necessary to go further into cultures, interesting as they are to the student. We all know that when life ceases dampness, warmth and oxygen are present and decay set up; this is bacterial life. The bacteria live and die and in doing so set free the oxygen, hydrogen, nitrogen and carbon locked by life in the dead body; these elements set free are again used to keep other life processes in new individuals. The decay of animal and vegetable life therefore release the material and they are again available.

The alarms raised by the yellow journals of the great danger to life is not necessary, for man had lived many hundred years before he discovered that his body was the hot bed or conservatory for the lower forms of plant life, yet the careless ways of our ancestors with their cess pools, garbage dumps, and emptyings of sewage into running streams, has given us much needless suffering, for surely the sins of the father fall heavily upon the children in matters of sanitation.

The majority of bacteria are vegetable, the fact that some forms move rapidly in a drop of fluid puzzled the students for a time, and led to classifying them as animals. So minute are they, that of the common rod-shaped one, it requires 1500 laid end to end to scantily reach across the head of an ordinary pin. After all has been said there are no more poisonous bacteria living on the human tissues, than there are poisonous shrubs and trees; therefore if we can render our food free from them and make our bodies immune we have little to fear; for harmful bacteria grow at the expense of the body or material on which they find lodgement. It is the life and death of these tiny organisms that give rise at times to the ptomaines in food. The disease germs, as of typhoid fever, are called pathogenic germs; these are fortunately not common.

Purity and Cleanliness the Watchword.

It is only when the healthy rhythm of the body fails that troublesome bacteria set in, that are disastrous to us. In other words a healthy body is immune, it may have bacteria pass through it, of all sorts of diseases, but they find no suitable place to grow and so pass on without doing harm. Water is always considered as being easily made impure, indeed most of the city diseases are water born. The water of cities, except where furnished by deep wells, should be filtered by the city in a large way. If this is not done then the householder must take precautions. A small still on the kitchen stove will furnish enough water for drinking purposes. The small domestic filter used is not only useless, but often dangerous, as the breeding places of the very germs we are seeking to destroy.

The green scum seen on pools as sluggish water are a minute algae or water plant, they make the water ill-smelling and disgusting. Dr. Moore of the Agricultural Department at Washington found that copper sulphate destroyed these completely, without injuring the fish in the water or rendering the water unfit for domestic use. The amount of water in the pool is measured and copper sulphate at the rate of a 100,000 part of water contained is placed in canvas bags and dragged though the water, either from boats or from long poles. In a couple of hours the water is found by chemical analysis to show no copper and the algae have disappeared. Water is not often dangerous from the bacteria natural to it but is tainted by the wastes of animal life. It is the human beings that taint it with their bacterial diseases. Water has been known to carry typhoid fever germs for miles underground. In Switzerland cases were traced from one side of a mountain to the other, by an underground connection between two springs.

Look to the Water Supply.

In California the wells in the country districts are driven through a subsoil that contains alkali. a In a few years the casing becomes perforated and surface water drains into the well. When we moved on the ranch we discovered that the wells were in this condition, and my father studied out a way to make them proof against sur-

Mrs. Minna E. Sherman

face water. The wells were cemented in the following simple way, and after twenty years of use, we see no reason for changing them, as the water remains pure. An iron casing fifteen inches in diameter was driven down thirty feet until it had passed below all surface drainage. Inside of this casing came another one of six inches in diameter, driven down until water was reached.

The six inch casing was capped for the time, and the water between the two casings pumped out, then a hose two inches in diameter was used to sift cement down to the bottom. After twenty pounds of dry cement was in place around the six inch casing, a small weight was run around to settle it more firmly, then a smaller hose was introduced and twenty pounds of water was evenly spread on the cement. This was repeated until the surface was reached, then the well was left alone for a week. When the six inch casing was uncapped it was found a little cement had reached the inside and this was drilled out. The water has been tested from time to time and found to be pure. It took eight sacks of cement to cement this well, but as the well has never given us any trouble it has paid well. The well is 108 feet in depth, with water rising to within twelve feet of the surface.

People fear sewer gasses, yet they are a slight source of danger compared to water, as nearly all the bacteria of diseases or pathogenic germs require moisture to become active.

Eradication of Tuberculosis.

Tuberculosis, the great white plague, it is said could be stamped out in twenty years, if the people infected with it could be induced to carefully burn all the expectoration and excreta from the body.

The region around Mentone, France, was the healthiest in the world and patients even from the United States were sent there and returned cured. Now, even the rugged peasants are dying off with consumption. This bacillus resists dryness and remains alive for long periods. It is carried around to every part of the world in dust and only waits for moisture and warmth to start its life processes. It naturally finds these readily in the human body, on the moist lung surface, or in the food it infects the stomach and bowels.

The rooms that have been occupied by a consumptive should be fumigated and everything in them disinfected; the paper removed and the wood work repainted.

In New York City, the tenement districts showed certain spots that were marked black with death from consumption in the health charts. These the authorities ordered specially disinfected by removing the plastering and having it renewed and new paint put on the woodwork everywhere. At once the infection of new inmates ceased and the spots became white on the charts.

Typhoid fever is always the result of some one's carelessness in not disinfecting the discharges from a sick person, and while it comes in the water, it is always placed there by a previous case. Without the infection of a bacteria introduced in the stomach, there cannot be any typhoid, no matter how filthy the surroundings.

Sources of Contamination.

One great source of contamination is found in the house fly; it breeds in cesspools and manure heaps, and carries its bacteria on its feet. It alights on the moist warm food, and when that is eaten we have a grave source of danger. The house must be thoroughly screened to keep out flies. Cesspools and manure dumps must be made sterile by use of lime or kept dry by using earth over them.

The pets of a household bring disease; the house cat wanders into filth and yet is often placed upon the bed with the baby. Ringworm is said to be a cat or dog disease, rather than a human one, and that it is usually caught from the family pets. Glanders, anthrax and lumpy jaw has had its human victims.

Milk not Always Dangerous.

Milk is the food most censured, but that is because it is the easiest to attack. The dairyman is not rich, and he can easily be put out of business by a little well directed attack. The meat trusts have put the small butchers out of business and are too powerful to care for the attacks made on them by local health boards.

The milkman has often suffered from malicious persecutions, the newspapers joining in the cry, but when he has pushed the case to trial nothing has been proven to his detriment. The same newspapers have not come out in his vindication, they have merely put in a tiny note somewhere about it. The bacteria count means little, for often milk may have a 100,000 or 200,000 count, and if not one are pathogenic or disease germs be more wholesome than a milk with perhaps a hundred if one or two of these are the

Continued to Page 243

Grapes are heavy consumers of Potash, which must be renewed in the soil if the yield of the vines is to be kept up.

Potash

at the root of the vine means a profuse yield of luscious clusters on the frame.

Our free booklet, **"Plant Food,"** tells much you should know about plant fertilization. Write for it now.

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Deciduous Fruit Culture

By J. W. MILLS

GRAPE CUTTINGS IN HEAVY SOILS.

THE planting season is now well underway in the various deciduous fruit growing sections and especially in the desert regions. Perhaps the majority of vineyards are planted from cuttings. This was especially true in the Imperial country previous to this time. It has been demonstrated, however, that the best results are obtained from plantng rooted vines. Several hundred acres are to be planted this season, and many of them will be with cuttings.

Avoid Over-Irrigation.

Last season we had occasion to visit several newly planted vineyards in the Imperial section, and on the light sandy soil, nearly one hundred per cent. of a stand was obtained from cuttings. On the heavier soils, a very poor stand was obtained, the difficulty in such cases being that too much water was used.

Fig cuttings planted ten inches deep were completely rotted off at the bottom and the tops protruding a few inches above the ground were dried out completely. Midway between the cuttings were green and in many cases sending out shoots and roots.

Cuttings should be completely buried in that climate and should not be over ten or twelve inches long. If the tops sticks out of the ground they will dry out before the roots can start, and most farmers will conclude that the plants need water when they see this, while in fact the soil is moist enough in most cases. Sometimes they are too wet when the tops are dried out, as shown by the fig cuttings referred to.

Proper Planting and Care.

By covering the cuttings entirely up and examining the soil occasionally and only irrigating often enough to keep the soil moist slightly in excess of what is ordinarily required for rooting cuttings, better results will be obtained on these heavy soils.

We appreciate the fact that it is folly to try and maintain a certain uniform condition of the soil as regards moisture in that country, and a slight excess is the only safe method to pursue, but it is not safe to be guided by the appearances of the upper end of the cuttings.

Water is almost always turned on when the tops of the cuttings show dryness, and unless they are on sandy soil that will permit the surplus water to drain off, or if the cuttings have not already struck root on the heavy clay lands, they receive a shock that will usually kill them. These vineyard problems are far from being worked out, some claiming that rooted vines die in about the same proportion as cuttings.

We are convinced in our own mind that this condition is due almost entirely to the improper use of water. Water is cheap there and easy to apply, and it is a great temptation to use it on the least provocation. The farmers have also labored under the uncertainty of supply owing to their water troubles, and many admit that they often used more than they should because they did not know when it would be shut off indefinitely. Under such conditions, proper methods are hard to follow.

Subsoiler Needed.

Land that is formed by deposits from overflow like those of the Imperial Valley, have layers of heavy and light soils, and it is hard for water to penetrate to a very great depth, unless these layers are broken up.

One farmer irrigated his vineyard every two weeks, running water between the rows of vines every eight feet, still his land will sub-irrigate forty feet on each side of his furrows, which is due to layers of clay beneath the surface.

It seems certain that where there are such layers within reach of the subsoiler, much good could be done by the use of this implement. By running the subsoiler to a depth of two feet, the irrigation water would begin immediately to spread from that point, and while the surface may be kept comparatively dry for a few irrigations, the water would be placed below in less time and at less expense than if it had to soak from the top down.

it is very clearly shown in a number of cases in the Imperial Valley that too much water is being used. Some of the best farmers informed us that they had proved it. They were dry-land, hot country farmers for years before they went there, and also had considerable experience in irrigating field crops.

The trouble has been that it was too easy to grow big crops with plenty of water and little cultivation. This worked all right for a few years, but there was a limit. More cultivation and less water has given the best results with field crops, and all the evidence goes to show that in vineyard practice, the same rule will hold good.

SULPHUR FOR MILDEW.

Every grape-grower should supply himself as early as possible with all the sulphur he will need during the season to control the Oidium or Vine Mildew in his vineyard. Many who neglected this precaution last year lost a considerable part of their crops by attacks of this disease.

Commence Work Early.

In most parts of California the Oidium can be easily controlled in the spring and early summer, and so completely eradicated from the vineyard at that time that there will be no danger later, during summer and the ripening period. Even where there is danger at all seasons, as in the cooler coast valleys the late control is much facilitated by prompt and thorough treatment during the spring

A proper sulphuring in April or May is far more effective and costs much less than one in July or August.

A bulletin on the Oidium and its control will be issued by the Agricultural Experiment Station shortly, in time for the first sulphuring, but, in the meanwhile, a few hints on the kind and amount of sulphur necessary may be useful.

Applications and Apparatus.

The amount of sulphur needed will depend on the locality and the method of application. We may reckon that on the average, in the drier parts of the interior one, in the cooler parts and the main coast valleys, two and within the influence of frequent summer ocean fogs three sulphurings will be needed. We must provide also for the possibility of having to repeat the first sulphuring in case the sulphur is washed off by rain or wind before it has done its work.

Those who are fortunate enough to possess suitable knapsack sulphuring machines will need less sulphur than those who are forced to use the usual method of distribution by means of preforated cans. Nearly everybody can, however, obtain a hand bellows, which are better and more economical than the cans.

The following table indicates approximately the amount of sulphur which

will be needed under various conditions:

Amount Needed for 500 Vines.

	Number of Sulphurings		
	One	Two	Three
Knapsack Machine.	10 lbs.	17.5 lbs.	30 lbs.
Hand Bellows	15 lbs.	30.0 lbs.	50 lbs.
Perforated Can.	20 lbs.	50.0 lbs.	100 lbs.

Allowance is made in this table for the cases where it is necessary to repeat the first sulphuring, in locations where two or three treatments are needed. These amounts, however, will be sufficient only if the work is done properly. One proper sulphuring is better than three imperfectly applied.

The best sulphur to use is that which is in the form of the finest powder. With good flowers of sulphur less than the amounts indicated above will be sufficient, with coarse ground sulphur more might be needed. The best sulphurs usually cost more per pound, but may be the least expensive, as they go farther and are more effective. The quality of the sulphur cannot, however, always be determined by the price, so that a few directions as to how to judge of the quality may be useful.

How to Know Good Sulphur.

1. The finer the sulphur, the more bulky. Therefore if several sulphurs are in sacks of equal weight, the largest sacks will contain the finest sulphur. A 110 pound sack of good flowers of sulphur is twice as large as a 110 pound sack of very coarse ground.

2. The color of sublimed sulphur is a clear, bright yellow. The color of ground sulphur will vary with the fineness. Coarsely ground sulphur is almost of the same color as sublimed. When finely ground the color becomes whitish. The whiter a ground sulphur, the finer it is, provided the color is not due to adulterants.

3. A good sublimed sulphur should feel as soft as flour when rubbed with the fingers in the palm of the hand. If hard particles are felt, the sulphur is not of the best quality. Ground sulphur always feels a little gritty, but the hard particles should not be large or numerous.

4. A very good idea of the fineness of sulphur can be obtained by the use of an ordinary good hand magnifying glass costing about one dollar. A magnification of 10 to 20 diameters is sufficient. With a little experience sublimed and ground sulphur can be distinguished by this means. The particles of sublimed sulphur are all nearly spherical with smooth outlines. Those of ground sulphur are irregular and with sharp edges.

The sulphur is most easily examined when spread on a piece of glass over a dark back ground. A good way to spread the sulphur is to place a small pinch on the glass, wet it with a few drops of ether and shake. This will distribute the sulphur in a thin layer over the glass and much facilitate the examination.

The Agricultural Experiment Station will gladly examine samples of sulphur sent by growers and report on their quality.—Frederic T. Bioletti.

OLIVES FROM CUTTINGS

The olive "takes" readily from cuttings. The cuttings preferred are those taken from mature trees and are made from twelve to fourteen inches long, of two-year old wood, or older, and from one to one and one-half inches in diameter. They are taken from the trees in December or January, and trenched in some convenient place, preferably in the shade, where they are kept till the middle of February or the middle of March, or later, when they are planted in nursery rows. The ground is thoroughly prepared. The cuttings are planted from twelve to thirty inches apart, and about ten to twelve inches deep. The soil is hoed toward them on both sides, leaving the cuttings covered to within an inch or two of the top, in the center of a ridge. The loose soil around the top protects the cuttings from being scorched by the sun. As the cuttings begin to grow, the shoots put forth through the loose soil and are not disturbed. They are allowed to grow for one season without pruning. The removal of the growth the first season gives the cuttings a shock that prevents the formation and growth of the roots. Many growers plant cuttings at an angle of about forty-five degrees. The season following all shoots and growth are removed, except one which is to form the tree. This one is carefully trimmed, and a stake is driven close to it, to which it is tied.

PUMPING PROJECTS.

Chief Engineer Newell reports that rapid progress has been made on the several pumping projects in North Dakota. These projects contemplate taking water from the Missouri river for use on adjacent lands, by means of immense pumps. Throughout the part of the state where pumping is feasible there are immense beds of lignite coal, which will afford a cheap fuel.

Owing to the fact that the Missouri river is continually cutting its banks, it was found impractical to locate any structure like a pump on the banks. To overcome this difficulty the Reclamation Service is building the power house and placing the heavy machinery for developing power at the coal mines, and conveying the power by electric conduits to the pumps, which are located on barges moored to the shore.

The construction work on settling basins, power houses, and distribution systems is well advanced, and it is expected that the machinery will be put to the test in the spring.

STILL WITH THE FIRM.

A big New York wholesale house not long ago started a certain drummer on the road giving him $200 for traveling expenses. [illegible] passed and nothing was heard from him. Finally, the house, becoming impatient, telegraphed the deliquent as follows:

"No advices from you since you left. Are you still with us?"

In a little while the answer came:

"Referring yours of fifteenth. Have drawn on you for $250 additional. Am still with you."—Lippincott's.

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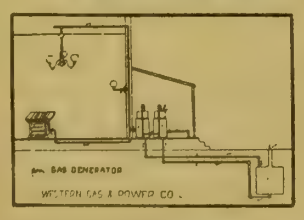

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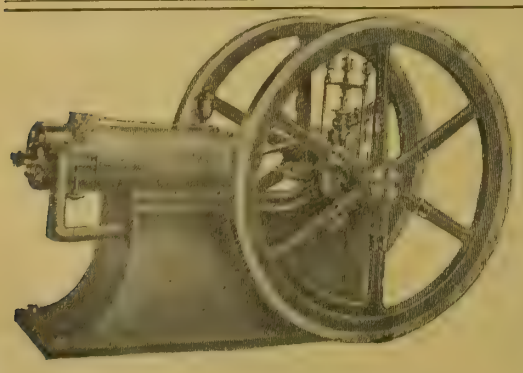

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With the Citrus Growers

By J. W. MILLS

BUDDING OVER OLD TREES.

At a recent meeting of the Lemon Men's Club held in the Los Angeles Chamber of Commerce, the subject of budding over old orange trees was discussed. It developed that some of the lemon men had some Valencia trees, which they were going to bud to lemons. Still others had a few Washington navel trees, which they might bud to lemons. This was rather significant when we stop to think that a lot of people are falling over themselves to pay from a dollar to a dollar and a half for Valencia trees to plant.

What Buds to Take.

The best methods of budding over old trees was discussed. It was the opinion of those present who have experience, that cured buds gave the best results. The buds should be selected from the bearing wood of the trees and should not be much larger than a slate pencil. One member remarked that when a budder used buds from a branch that was as large as a lead pencil, he was surely getting his buds from sucker wood. Those buds should be condemned on general principles. Buds from bearing wood on lemons are of course to be found on larger growth than those on orange wood of the bearing class.

When orange buds are to be selected, they should be taken near the ends of the branches, which will be the early growth of the past summer. This wood will be round and well matured with the buds still dormant and the last spring's leaves still vigorous. Cut the bud sticks a few weeks ahead of budding time and keep them in damp sand, but not too wet. The scions should be toughened in the process.

The eyes of the buds are very brittle when first cut and this curing process toughens them. It also places the bud in a receptive condition for the sap. That is, it reduces the percentage of sap in the bud, below that of the tree when it is in proper condition to bud, and as a consequence, the bud takes up the sap from the tree, when it is inserted, just as a moderately dry sponge takes up the moisture from a wet surface. It is the interchange of sap immediately after the insertion of the bud that makes the union. If this interchange does not take place at once, granulation on the stock will commence and the bud will die.

How to Insure Success.

When the bark slips the best common cotton strings will make a good wrapper, but they are slow to use as it takes many more wraps to cover the bud than it does with strips of cloth. Waxed cloth is the most commonly used and should be made by dipping sheets of cloth, new cotton such as light sheeting is made of, in pure boiling beeswax. The surplus wax should be scraped off by drawing the cloth between two sticks.

Spread the cloth out evenly to cool and tear in strips about five-eights of an inch wide. There has been considerable trouble during some seasons, with a fungous growth that kills the buds. Upon removing the wraps, the buds will be covered with it and such buds die. We are not sure but that dipping the wrapping cloth in a strong solution of bluestone water and afterward rinsing in clear water to remove the fungicide, will reduce this loss from fungus. It is important to rinse the surplus bluestone off before using the wraps as it is corrosive and may injure the buds.

When large trees are to be budded over, which is best done in May or late in April, all the main branches not used in budding should be removed at the time the buds are inserted. This throws the surplus sap into the remaining branches and seems to insure a better flow of sap into the newly inserted buds.

An incision is made lengthwise with the branches, several to the branch, and with the budding knife, held with the back of the blade slanting down, a crescent-shaped cut is made across the lower end of the perpendicular incision, and before removing the knife make an upward movement of the blade which will lift the two corners of the inverted "T" shaped incision.

The bud is inserted from below and pushed upward. This prevents water from running down and around the bud. Wrap with the waxed cloth, leaving about an inch of the cloth sticking out at the point of beginning, wrap over the bud and back, bring the two ends together and twist them.

The wax will stick the cloth and obviate tying. In cutting the bud, make a straight cut about three-quarters of an inch long, leaving the wood beneath the bud in place. The leaves should not be pulled from the buds when the scions are taken from the tree, but must be cut off so as to pro-

(Continued on page 248.)

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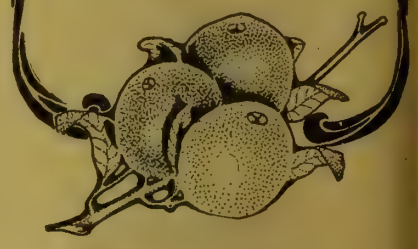

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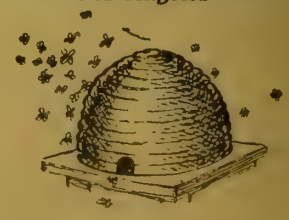

Growers of Trees BEFORE BUYING **Orange Trees**

SEE MINE, OR WRITE ME ABOUT YOUR CITRUS NEEDS. IT WILL PAY YOU.

B. C. Benner Citrus Nurseries San Dimas, Cal. Home Phone 1913

California Horticulturally

By JOHN ISAAC, Sacramento, California

SHIPPING FRUITS IN GAS.

THE experiments made at Antioch of preserving and shipping fruit in nitrogen gas have progressed so far that the projectors are now assured of success. The theory is that fruit packed in nitrogen gas will remain for an indefinite time precisely in the condition in which it was packed, the gas destroying the germs of decay.

So, fruit surrounded by pure nitrogen gas and thoroughly excluded from the air would remain in the state in which it was subjected to treatment until wanted for consumption. This has been demonstrated in the laboratory, but when attempted on a commercial scale many new problems presented themselves which have had to be solved.

It was exceedingly difficult to manufacture an air tight package, and the slightest admission of air degenerated the gas and started decay. It was found difficult, too, to manufacture a perfectly pure gas, as other elements became mixed with it and corrupted it.

We understand that these difficulties have now so far been overcome that it is not improbable that the coming season will see the new process put into actual operation on a commercial scale. If all the projectors hope for it proves true, fruit can be packed when fully ripe, and kept for years and shipped to any climate, and be opened for use as fresh and luscious as when picked from the tree. It is needless to state what this means to the orchardist, or that the projectors have the best wishes for their success of every fruit grower in the State.

DISHONEST TREE SELLERS.

A bill, the intent of which is good, has passed both houses and is in a fair way to become a law in a short time. This provides penalties for selling trees under false names, or by misrepresentation and prescribes methods of proceeding against parties guilty.

An act of this nature, is worthy of the severest punishment, for it not only cheats the purchaser out of the cost of the trees, which is trivial, though bad enough, but it deprives him of years of labor, the use of his land and the value of a number of crops which should be the reward of his work and patience.

The planter has got to take the nurseryman's word for the trees he buys, and he pays for them, plants them, cares for them, devotes his land to them on his faith, and it requires several years before he can tell whether he has been honestly dealt with or not. How this new law will catch the tree peddler and agent who are far away when the evidence of their deceit appears, it is impossible to tell, and it is this class who are the worst, not our local nurserymen who have a reputation to maintain.

HORTICULTURAL BILLS.

The legislature is wrestling with several bills in which the fruit growers of the state are deeply interested. First there is the one making an appropriation of $12,000 for continuing the search for beneficial insects, which is now well on its passage and will undoubtedly pass.

Then there is one increasing the compensation of horticultural inspectors from $2.50 to $3.00 per day, this bill is also well on its passage, and as it is a just one, will undoubtedly become a law. Now a new bill has been introduced by Senator Willis, completely revising the law organizing the County Horticultural Commissions. It does away with the three-men commission and provides for a single commissioner, who is to be appointed for four years and who can only be removed for cause.

His compensation is placed at $6.00 per day. It makes several important changes in the present law ,and has very strong backing in the legislature. Another bill makes an appropriation for continuing the fight against the pear blight, so that altogether the fruit growers' interests are being pretty well looked after by the present legislature.

GOOD WORKING WEATHER.

Farmers and orchardists alike have been taking advantage of the fine weather of the latter part of February to catch up with their work which the continuous bad weather of the winter had so seriously delayed.

Plowing and seeding have been rushed in all the grain sections, and while the total area will fall below the normal, there is still a very large acreage being sowed to grain. With late rains, which are probable, this will yet make grain, and at the worst will make good hay for which there is always an active demand.

Pruning and spraying were both very much delayed but work along these lines has been rushed and, with few exceptions, has been finished before the trees started to leaf out. So, while the season has been unpropitious for work in the open, this has now been pretty well done.

FRUIT PROSPECTS.

Deciduous fruits are now in bloom, that is some of them are, and the fruit buds are all swelling. So far, there is every promise of a good fruit season.

There has been no unseasonal hot weather to start the sap or force the trees into immature blooming nor have we had any unduly cold weather to chill them. If we escape heavy rains during the blossoming period and late frosts we shall be all right for the banner fruit crop this year.

SUITS AND BOOTS

If you are interested in Outing Suits, Headgear, Footwear, Shirts, Leggins or Gloves, send for our new Catalogue. It is printed on heavy book paper, contains numerous colored plates and many fine cuts of clothing and footwear actually in use; and is the handsomest Catalogue of its kind ever issued.. Sent without cost to people who mean business.

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Genasco is natural asphalt—the only material that doesn't dry-out, rot, rust or crack.

Every other roofing is injured by some kind of weather and lets in the water—which means damages, repairs, loss.

Weather-proof is water-proof.

Ask your dealer for Genasco—smooth or mineral surface in several weights. But write, anyway, for the convincing book **35** that tells facts and reasons, and shows the Eighth Wonder of the World, the famous Trinidad Lake of Asphalt.

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Largest producers of asphalt in the world
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IF YOUR DEALER DOES NOT CARRY "MOCOCO" FERTILIZERS. order direct. Pamphlet and Price-List free. on application. Accept no substitute; insist on having "MOCOCO"

"Iron Age" Tools

This is another of our combination tools, used as hiller or drill seeder, plow, hoe, rake, cultivator, etc. The lightest and strongest garden tool made. Send for illustrated booklet.

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Wholesale and Retail Wagons, Carriages and Implements

THRIPS THRIPS
USE C. C. C. ANTI-CARBOLIC TREE SPRAY
This spray is ready for use by simply adding cold water. It assimilates perfectly and forms no sediment. Makes the trees clean and healthy. **The most successful and economical spray.**
CALIFORNIA COMPOUNDING CO., INC.
Works, 207-209-211 West Taylor St., San Jose, Cal.

EGGS Ringlet Barred Rocks $1.50 and $2.00 per sitting 15. Black Minorcas (Albert strain) $1.50, and $2.00 per sitting 15. Mammoth Pekin Ducks $1.00 and $1.50 per dozen.
EDWARD A. HALL, WATSONVILLE, CAL.

MILK CANS

Write us for prices on the **Buhl** sanitary **"Glass Finish"** Milk Cans, all sizes. We have the largest stock on the Coast and our prices are the lowest.

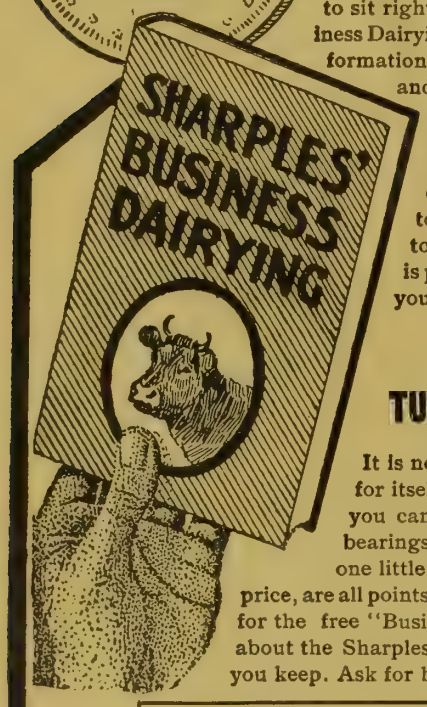
See Our Cream Separators

O. J. WEBER CO.

Manufacturers and Importers of
Machinery and Appliances for Dairy and Creamery
555-557 So. Los Angeles St.
Los Angeles, Cal.
Phone Sunset Broadway 5006 Home 3627

TO FARMERS AND DAIRYMEN

It will pay every farmer or every farmer's wife to sit right down and write for Sharples "Business Dairying." This valuable book contains information that can be found in no other book, and will help any dairyman to make his business more profitable. It tells How to Feed, What to Feed, How to Care for Feed, What Foods Produce Greatest Amount of Milk, How to Care for the Dairy Cow in the way to get best results, and the whole book is practical. To get all the good out of your milk you should of course use



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It is not only guaranteed to more than pay for itself annually, but the ease with which you can skim, the low can, the self-oiling bearings, the simple **Tubular** bowl with only one little part inside to wash, the moderate price, are all points you should know about. Send today for the free "Business Dairying" and full information about the Sharples Tubular, giving number of cows you keep. Ask for booklet G. 260

Mrs. J. Renken, Trenton, Ia., says "We cleared $100.00 in six months off seven cows."

THE SHARPLES SEPARATOR CO.,
Toronto, Can. WEST CHESTER, PA. Chicago, Ill.

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The Largest Importers
in America of

German Coach, Percheron and Belgian Stallions

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WITH A SEIVERT OIL BURNER

You can burn 100,000 feet of air with every 130 gallons of oil; this means perfect combustion. To burn more than 100,000 cubic feet of air with 130 gallons of oil, there is a decided loss of heat. To burn less than 100,000 cubic feet of air there is a loss of fuel. The only safe and reliable burner on the market. Send for full particulars.

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PERCHERON HORSES
HOLSTEIN CATTLE...

2 Young Black Percheron Stallions
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10 Young Holstein Heifers
ALL REGISTERED

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For Sale, Three Thoroughbred Registered
HOLSTEIN FRESIAN BULLS
FIFTEEN MONTHS OLD
GEORGE F. SPENCER, COMPTON, CAL.

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cures lameness, splint, curb, thrush, colic, founder, distemper, etc. Standing offer, good everywhere: $100. for a failure where we say it will cure. **"Veterinary Experience"** free. 100 pages, the perfect home horse doctor. Write for a copy.

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MILK STRAIN
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Thoroughbred Poland China Swine
Black Minorca and Barred Rock Poultry
High Grade Stock of Best Strains.
Young Stock For Sale.
M. Bassett - - *Hanford, Cal.*

Live Stock and Dairy

By Mrs. Minna E. Sherman, Fresno. Cal.

THE COLTS.

"ALL THE world love a lover," but far more does all the world love youth. The young vineyard and orchard have a charm of expectancy; they are a vision of the future. The hardest money-grasping man's eyes will lighten and glow when he tells of his new planting of vines or trees.

Babies of the Barn.

The babies of the stable and barn, the colts and calves, are full of winson frolic. To the breeder of fancy stock there is more than fascination in watching the conformation or type reappearing, it tells of the various ancestors. The eye learns to see in the form of the colts the blood of the thoroughbred, or of old Hambletonian, Wilkes, or other noted family of horses cropping out in the youngsters.

Our Holstien calves show the strains of their ancestry as marked as the colts, Methchildes, Pauline, Paul, Netherlands or De Kol crops out markedly in these wee ones. The innocent gentle faces of the colts and calves are appealing, how can anyone help but love them?

The funny little colt runs around his mother, twitching his stubby tail and arching his neck, as he makes believe to be frightened. The next moment his bright eyes are viewing you from under his mother's body. Move toward him and he darts away, timid, coy and yet lingering to be coaxed, hoping to be petted, yet fearful of familiarity. You are to him the great world and he desires, while dreading, to know you better.

The first six weeks of a colt's life is best spent with his dam in a green pasture, quietly away from other horses.

After Six Weeks Old.

After six weeks the colt will be better nourished if the dam receives grain feed and regular exercise; she should be worked to a wagon with the colt following her.

Two of our mares with their colts running loose are used on the manure wagon around the barns, two more haul the wagon to feed the dry stock with hay; these short hauls with long pauses are not too much for the colts.

When the colts are five months old they are separated from their dams, and are put together in a corral. The mares then take their places at full time work. At noon after the mares are fed and watered and cooled off, they are turned in with the colts for an hour, then they go to work again. At night, as soon as they are cooled off, they go into box stalls with the colts.

The mares must be well fed, so as not to stunt the colts. The colts are fed bran with a little rolled barley added and plenty of bright alfalfa hay.

Weaned at Six Months.

At six months the colts are weaned. This is not difficult It is done by lengthening the time between the nursings, omitting at first the noon time; then at night.

The mare must be watched and milked out if the udder is too full, milked a little but not clean, for the idea is to make the mare go dry.

The weaning time is not definately fixed at six months, as we prefer to have it come when the grass is good, for that keeps the colts growing right along. The colts live on alfalfa pasture the first summer, until it begins to grow hard and tough, then their feed is added to with rolled barley beginning with bran and a little barley. It is soon made straight rolled barley. As the pasturage shortens the need increases for feed and bright alfalfa hay is added, always enough to keep them growing fast.

The colts are supposed to live outdoors and some winters the sheds are shelter enough. When long, heavy storms of wind and rain come as they have this winter it is well to shelter the colts better. Ours have this winter been turned loose in the barn durthe heavy rains. The yearlings and two-year-olds have been tied up in stalls like old horses at night. During the day they have run out in the corrals with the weanlings.

Training the Colts.

At weaning time one man is given the work of handling the babies. He halters them, trains them to lead and stand tied. Then he bridles them and drives them around with long reins. As soon as they go nicely and obey at, "whoa," "back," "stand over," "Get up," they are turned out once more.

This early training is more important than many think, for they are easily handled and it makes them gentle. If they are sick at any time they can be handled without making them terror stricken.

Many a colt has his gait spoiled by unshapely feet. The hoofs should be watched and shaped with a rasp, whenever they become long and break at the edges. Quarter cracks are common among the colts of the heavy draft breeds if their feet are neglected. The feet should be kept level and not allowed to grow more on one side than on the other.

When a year old the colts should be hitched up to a breaking cart with a steady horse and learn to pull a light weight. They should not go out of a fast walk, but should have half a mile a day for a week or two until they are steady.

The worst fault a young horse can have is throwing himself. When this happens have some one put their knee on his head and switch him gently over the nose a few times, using a small light switch that will sting. A couple of these switchings often ends the trouble.

As soon as the colts show they understand what is meant by pulling along gently, turn them out for a year's time. The yearlings should receive a little grain when the grass gives out, and be kept growing right along.

At two years old I prefer to have them do nothing for they are then weedy and the legs are easily put out of shape. It is the age to develop splints and curbs.

At three years they can be put at light work, half days at a time for draft horses, while the driving colts can be jogged two or three miles a day with safety. At three and a half to four years they are usually ready to do a day's work. Care must be used, however, and if they grow thin turn them out and feed them into good condition. At four years old they should do full work and come in frisking.

Auction Sale

24 Head of Dairy Stock
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South of Slauson Ave.,

Tuesday, March 12th

At 10 A. M.

MY ENTIRE DAIRY STOCK

Comprising 18 first-class Milk Cows, some of which are fresh, balance coming in in six weeks. 4 heifers from 9 months to 2 years old; 2 Jersey Bulls, one 10 months old and one 3 years old, both thoroughbred.

Also Milk Route, 2 Horses, 1 Wagon, Covered Milk Cans, Bottles and entire Dairy outfit. My cattle are all good Jerseys, Durhams and Holsteins and all in good condition and good milkers.

TERMS CASH.

Nothing reserved as I am going out of the dairy business. **Take Central Avenue car to terminus, then one-half mile south.**

R. J. Long, Prop. Rhoades, Reed & Rhoades, Aucts.
730 S. Spring, Los Angeles.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

Thoroughbred Poland China Pigs and Sheats
of both sexes for sale at reduced rates for 30 days. Address
W. R. McCaslin & Son, Walsh Station, Sacramento County, California.

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The Whiting Jersey Stock Farm Company
Is making the very best strains of blood fresh from the island of Jersey a specialty.
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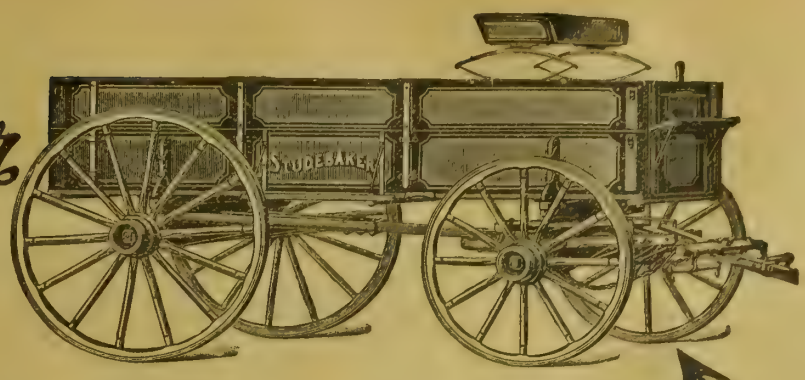
How a Studebaker Saves You Money



THE way to figure the cost to you of a wagon, a carriage, a buggy or a set of harness——

Is to figure the *cost per year* as long as you use it.

If a farm wagon, for example, that costs you $60 lasts 20 years and requires only $2 repairs, the *cost to you* of that wagon is $3.10 a year.

If another wagon costs only $50, and lasts 10 years, and requires $10 worth of repairs, the cost to you is $6 a year, at least.

Which is the cheaper?

* * *

There is no doubt about the *lasting* qualities of Studebaker wagons, carriages and harness.

It's the material that goes into them—plus the way they are made.

Studebaker farm wagons have axles ¾ inch deeper than others, made from selected butt-cut Black Hickory—*air-dried* from 3 to 5 years.

The axles are also *re-inforced* with a special bar of steel running from the heel of one skein to the other.

The Studebaker Patent Truss Skeins are made from cast iron having a transverse strength of over 3,000 pounds to the square inch—25% greater than the requirements of the United States Government—and probably 50% greater than the ordinary wagon.

The Studebaker hubs are large in diameter—furnishing a proper foundation for the spokes. They are treated with a secret solution, which greatly adds to their weather resisting qualities.

The Studebaker slope-shoulder spokes—one of the greatest improvements ever made in wagon building—carrying the largest amount of wood into the hub. They are *strongest* where other spokes are weakest.

See the Studebaker Agent

The Studebaker patented round-edge tires are *oil-welded* and *cold-set.* That's why they never loosen.

And so on—point by point—feature by feature—nothing that will add to the durability and long life of the Studebaker is overlooked.

Do you wonder that it lasts?

Do you wonder that it is the wagon with a reputation behind it?

You cannot afford to buy a "cheap" wagon, when you can get the best for so little.

It is poor economy to be constantly paying out money for repair bills.

Get a Studebaker and save money.

Go to the Studebaker Agent

and examine the Studebaker for yourself. Ask him for a FREE COPY of the Studebaker Almanac for 1907. If you don't know the agent, write us. Enclose a 2c stamp and we'll send you the book free. Please address Desk 78.

Studebaker Bros. Manufacturing Co.,
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SELLING AGENTS ALMOST EVERYWHERE.

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SAVES WATER, GRADING AND TIME

The **only** way to **Irrigate Alfalfa. Cheaper** than **Flumes.** This is only **one** of our **specialties.** We make **Riveted Water Pipe** in lengths of **ten feet** from **single sheets.** Let us **prove** to you that we make **Pipe** and **Tanks right.** WRITE FOR CATALOGUE.

TALLERDAY MANUFACTURING CO.
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A
DE LAVAL
SEPARATOR
will enable you to get the greatest results from your cows.
A 20TH CENTURY BABCOCK TESTER and an IDEAL MILK SCALE will indicate just what each cow is doing, and inform you what returns you should receive from the creamery. Some cows are profitable, others are not. Get rid of the poor ones and buy good ones. Ask for catalogues A and B.
De Laval Dairy Supply Co.
GENERAL OFFICES:
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BURN AIR AND SAVE FUEL

You can do it with the
HAGUE IMPROVED DOMESTIC OIL BURNER.
It burns more air than any other burner on the market. Can be fitted to stoves, ranges, furnaces, and all kinds of heating systems. Simplest and most economical burner on the market. If you want the most heat for the least money, write for information to

Hague Domestic Oil Burner Co.,
214 Winston St., Los Angeles, Cal.

CROP ROTATION.

Since the early days of agriculture in every part of this country farmers first robbed the soil of its fertility and then resorted to various devices to get a paying crop. A favorite device was to run away from the problem and seek new land; another, to give the land a complete rest from production.

In the meantime live stock increased, and barn manure, at first a farm nuisance, was more and more applied to the land, manures were composted, commercial fertilizers were employed, and sod was plowed under every few years. A true conception of the benefit, almost necessity, of rotating crops gained a foothold under the stress of hard conditions, and this explained into farm practice, even to the extent of raising manuring crops for the sake of plowing them into the soil.

For California, it is impossible to arrive at a fundamental crop rotation on acount of radical differences in soil, water supply, and climate. The reports show the practices to be almost as numerous as the counties, and indeed some counties have several practices in different parts. With regard to wheat and barley in some parts the general pratice is that the land rests every second or third year, in which it produces nothing but weeds and wild oats.

EULOGY OF THE HOG.

No reflection, hygienic or sanitary, is cast upon your city when I say that, for the hog, it is the most unhealthful in the world. I can count back 64,000,000 of him that have come to Kansas City, and the records show all dead. Therefore, as his next friend, I come to make a few remarks and introduce resolutions.

From antiquity, through the long progress of years, he has become civilized, is a debt payer, a mortgage remover, and a buttress of prosperity. He yields great luxury. He must be reckoned with by the luckless explorer of the Yukon. He is an automatic reducer of the corn supply and a raiser of the price. He is a bucolic bond whose coupons are large litters of pigs.

He is a patent pig, a condenser of ham, head cheese, glue, bristles, buttons, fertilizer, saddle covers and sausage. He is a mint, and the yellow corn is the bullion which he transmutes into coin. In all homes he is on the tables—high-born, rich and poor. He is with the soldier in the camp and the sailor on the deep.

At $2.25 per cwt., he is a plebeian, and we won't speak to him when we meet him on the street. At $7.25 cwt., he is a gentleman and a scholar and stops associating with the country people. He comes to town and becomes an aristocrat, but gets it in the neck at the packing-houses, is bled to death, becomes the commerce of the nation, the fat of the land.

The pig gets one luxury—dishwater. Dishwater contains preserves, molasses, pepper, tomatoes, milk, onions, steak, gravy, pickles, grease, cheese and exiled dishrags. It is sour and sweet, wholesome and toothsome.

In Texas they have the razorback hog. He is made up after the Swiss cottage architecture. The highest peak of his corrugated back is six inches above his tail. His tail hangs like a dishrag from a back window. He leaves the impression of a man starting late to his office in the morning. He lives on roots and peanuts. He will help his neighbor gather his crop by crawling under the fence at night. Crossing him with blue blood gives little improvement. The only effective way to cross him is with a railroad train. He can hide himself in a haystack where the hayknife has been rammed in and pulled out. His side meat is sometimes used for window glass. He is imperishable and can be used for a posthole digger.

One enthusiast says that the pig would be a better emblem of our nation than the eagle. The pig is thrifty, peaceful, far more representative of American character than the rapacious eagle, whose beak and talons signalize nothing but war.

Napoleon lost at Waterloo because his army had soup and the English had bacon. Ingalls would have gone back to the senate if he had not subsisted on oatmeal and baked apples. If you wish to rise to the glory of poetry and song, feed the fodder to the cattle and eat the beef and pork yourself.

The hog is found highly developed among a high-class people. He is impossible among low people. In good environment the hog and his twin, the steer, are the chief alchemists of fortune. He makes iron nerves, cool brains and brave hearts. He put courage into the men at Manila Bay; he cooled the heads of the heroes in the Chinese occupation, and he warmed the bellies of our gold hunters in the frozen North.—F. D. Coburn.

A GOOD COW.

Some men can judge by the looks of a cow whether she is a good milker or not. A good cow must have a big, round barrel, and a good pair of lungs, a wedge form, a good big udder and prominent milk viens. Generally a heavy horn and thick tail indicate beefy tendencies. The Babcock test is the surest method of determining wheth er individual cows are paying or not, but keeping the milk of certain cows seperate and churning it in a small churn by itself is a very practical way of finding out what each cow is doing in the butter line.

See Us for Sanitary Milk Bottles. O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

MACHINE MILKING.

The following article appears in the Kansas Farmer, written by B. F. Cowgill. The farmers of the Sunflower State must be somewhat behind the times in regard to milking machines for we have had them in use in different parts of California for a considerable period and we are at the present time carrying an advertisement of one of the most approved type.

The editor has seen the milking-machine in practical operation. It was during the corn show at the Agricultural College. The crowd of interested visitors was so great that there ought to have been trouble if there was any chance for it. Many cows were milked at the same time. An attendant told the writer that he could manage three machines milking six cows. It seemed to take about as long for the machine to milk a cow as for an expert milker to perform the same work, so that by using three of the double machines and milking six cows at the same time, the capacity of the man is greatly increased.

The sucking of the machine is very much like that of a calf, except that the machine sucks all four teats at once. The machine does not 'hunch" as the calf is sure to do if the milk does not come fast enough to suit him. There is no apparent reason why the machine should not get all of the milk. If left to work over time it does not seem to annoy the cow. Some of the cows seemed a little nervous as the attendant attached the suckers, but became entirely quiet as soon as the suckers get to imitating the calf.

There is a great advantage in machine milking on account of its cleanliness. If the teats are clean, no dirt can get into the milk. It is drawn through a rubber tube into a tight vessel, the only breathing hole of which is closed with antiseptic cotton.

The power used at the time of our visit was that of a steam boiler. A vacuum was produced by a steam jet. This is steady and easily operated. A gasoline-engine and air-pump are sometimes used. Perhaps a tread power and pump would answer the purpose well.

The apparatus is not difficult to clean. The closed vessel into which the milk flows is heavier than a large bucket, but otherwise not much more difficult to clean. The rubber tubes and the rubber suckers have to be kept clean. This need present no serious difficulty. Cold water, hot water, or any kind of wash may be drawn through them by placing the suckers in the wash and operating the machine.

If there are details to be brought to greater pefection, this will doubtless be done. The milking-machine should be on the market very soon. It is not adapted to the use of the small dairy, but will certainly be found profitable where great numbers of cows are kept.

For a Good, Practical Milking Machine see the O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

When writing advertisers mention Cultivator

VALUE OF COWPEAS.

Tests have recently been made at several experimental stations to prove the adaptability of cowpeas for dairy cows.

Of course the general value of this crop has been recognized for a quarter of a century by many dairymen, but quite recently the subject has received prominence because of the experiments made.

"The hay with the peas on is equal to corn and hay," is almost a proverb on the farm. But how is this feed for milk production? It is interesting to learn that in a test in pasturing dairy cows upon several kinds of annual crops at the Missouri station, cowpeas proved to be the best milk producer. At least so says the St. Louis Journal of Agriculture. At the Missouri station, in 1903, when cattle were pastured daily in a field which contained a variety of annual pasture crops in separate plots, it was shown that the stock relished green corn best and grazed upon it in preference to all other crops. Next to corn, "soy" beans were preferred. The third preferance of the cattle was probably for cane. The fourth was for cowpeas. But, notwithstanding, it was observed that in the plots where cowpeas and corn were growing together the peas were well eaten before the cane received much attention. The suggestion is, then, that it would always be well to plant a little corn with the peas for pasture, though the former should not be planted so thickly as to shade the latter. With cattle, the grazing on peas may be begun earlier than with hogs or sheep—and while the crop is still green and growing.

Cowpeas are not grown for feed much in California, Canadian peas being preferred. But if experiments were made along the line of fodder, instead of fertilizer for the orchard alone, we might find cowpeas quite as valuable as they do at the eastern experimental stations..

CLEAN UDDERS.

We know dairying is only in its infancy in California. The time is not far distant when the State will not only produce its own consumption of butter but supply the South and Southeast with butter.

We doubt if dairymen generally ever read of the scheme devolved by an Iowan to keep his milk clean. The usual way of cleaning the udder is by washing it and wiping it dry, another way is to brush it well. The former is the better plan, but where there are a number of cows it requires too much time—at least milkers think so. It has been demonstrated beyond argument that to obtain pure, sweet milk the udder and teats must be absolutely clean. This Iowa man has a new and novel way. He cuts the hair off. This is what he says:

"My experience has been that a cow gets quite woolly in winter. The strictly dairy cows that are kept in warm barns do not have such a growth of long hair on the udder as those that are common cows receiving common care. But in either case the cows need a hair cut, and need it often. But here's another hint. When I first tried to give a cow a little trimming up so I could find her teats, I used scissors. All went well till I cut a little extra teat that was hid in the underbrush, and then the job was over—so was I. But I got a barber hair clipper for a dollar and used that with never a kick and kept the cows udders free of hair so that there was nothing for bedding and dirt to adhere to.

The looks alone will pay for the trouble and the cost of the clippers. You can trim up the tail and improve the appearance of the cow very much. Try it."

We would not say to try it, but we would think about it, for the cow is likely to take cold if the covering nature has provided is removed.

PROFIT IN SHEEP.

The growing scarcity in this country of the "animal with the golden hoof" is to be deplored. A writer in the Country Gentlemen says, all his life he has been interested in sheep-raising, and followed it when prices were low and when they were high, in order to find out if sheep-raising could be carried out at a profit. After a rather long experience and careful study, he was able to say that he was certain that sheep-raising was a paying undertaking. Even when the prices for wool and mutton were very discouraging, myself and my neighbors were able to make this department of the farm pay, and considering all kinds of prices, the average profits of sheep-raising were as good as those of any other department of the farm work.

Every farmer should keep a few sheep—a dozen or twenty—to consume his rough feed, clean up his weeds, and yield him extra money, at a minimum trouble and expense. In fact, by careful selection, breeding and feeding, the profits the farmer can realize from his sheep will be greater proportionately than from any other stock. Instead of selling his lambs in the fall, when they are low in price, he should keep them until the early winter or spring, and so double his profits. Lambs worth $3.50 in the fall will yield a profit of from $3 to $6 if fattened and turned off later.

Griffing's Semi-tropic Nurseries, Sarita, Texas, has taken over the Gulf Coast Line Nursery, and will hereafter be under the management of W. C. Griffing. The new firm will give special attention to hardy citrus trees, the finer varieties of budded and grafted pecans and a general line of fruit trees, vines, plants, ornamental trees and shrubbery, especially adapted to Texas, Mexico and the Southwest.

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As we have dispersed our herd, except a few heifers for home use, we are forced to offer for sale this valuable sire. We will sell him at a low price to a breeder who is in a position to give this bull a chance to make a record.

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These machines are as good as the day they were installed by the original manufacturer. Of course we can't guarantee their reliability, but if you want one we will gladly sell it to you for less than the cost of the raw material. We have about fifty of these machines and among them being a large number of "Superiors"; so before purchasing another make of machine write us for prices, at the same time we will send you circulars describing the most perfect acetylene generator on the market, THE PERFECTION. Address

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National Wood Pipe Company

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FOND DU LAC, WIS., Nov. 8, 1906.

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27 pictures with plain, easy-to-understand explanations in our new catalogue, make the construction and operation of the U.S. as plain as though the machine was before you. Let us send you a free copy. Just write: "Send Construction Catalogue No. **20** ". Write today.

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or one 50-lb. $5.75 double sack for $3.50, and will prepay the freight to any point west of the Rockies. Not more than 50 lbs. to each one, and we reserve the right to withdraw this offer without notice when we have received all the orders we care to fill at these very low prices.

We are presenting no cheap premiums nor offering any gaudily colored pictures, but are making this strictly legitimate business offer for the purpose of inducing many more to try WEST COAST STOCK FOOD. We thus hope to add to our large number of steady customers. We are charging up the difference and the freight to our advertising account feeling sure that a trial of the goods is the very best advertising.

There are no strings to this offer. Just send us your name, your post office address, the freight station to which you want the goods shipped, mention this paper, and we will do the rest. Send money order or check with your order, and if everything is not exactly as represented your money will be refunded. The First National Bank of this City, or Bradstreet's Agency, or any leading firm, can inform you as to our reliability.

West Coast Stock Food

Beyond Question the Best Condition Powder Made

Our Trade Mark

Long a Familiar Sight Hereabouts

A purely vegetable compound, very strong but harmless, and may be fed to calves, colts, lambs and pigs, without fear. It will make young stock grow and develop in a rapid yet natural way, while matured stock will maintain health and vigor by its regular use. It purifies the blood, tones up the system, acts on the digestive organs, enabling the animal to assimilate all of its food and convert the same into blood, bone, fat, sinew and muscle. Hence it is a **great feed saver.** It puts the system in proper shape to be sustained and developed in nature's own way. Its use avoids all tendency to tuberculosis. And besides being a general conditioner, this preparation is a cure for **Epizootic, Cough, Hidebound, Distemper, inflammation** of the **Stomach, Caked Udders,** and all sorts of **Colds,** etc. Specific directions in each package.

Your stock needs a condiment just as you need salt and pepper—they relish the food better and digest it better. Read what a leading professor in a prominent agricultural college, in a recent article on Stock Foods, says:

"They will always be found useful when properly made. The time will never come when intelligent feeders will cease to use them. The necessity for using them and the advantage therefrom will become greater as foods become increasingly dear. Whether it will be profitable to feed them will depend upon the necessity for using them and on their cost. My special desire, however, is to show that they have a place in the economy of intelligent feeding. The question of price must be fought out between buyer and seller."

The best is always the cheapest. A dollar's worth of **West Coast Stock Food** will go further and produce more and better results than will two dollar's worth of many so-called "stock foods" which contain a large amount of cheap filler. **West Coast Stock Food** is highly concentrated and therefore less needs to be used. Why buy stuff shipped over the Rockies at high freights, when better goods, better adapted to these west coast conditions, are made and sold right here at lower prices. **West Coast Stock Food** has been a standard preparation upon this west coast for many years. It is the result of long, careful, and intelligent experimenting and study on this west coast and under its peculiar conditions.

MERCEDES JULIP'S PIETERTJE, H. F. H. B. 39480.

This is a photo of a Holstein cow of international fame because of her marvelous recordas a butter producer. In seven days, in a Minnesota mid-winter,she made 584 lbs. of butter, thus becoming the **Official World's Champion.** She was then owned by the present**President** of the **West Coast Stock Food Company.** It wasonly by recognizing and applying the principles of feeding weare now seeking to emphasize that this remarkable record was possible. This cow was bought for $200 and in less than eighteen months she, her heifer and her bull calf were sold for $3700. It pays to take the best care of stock as well as to feed them intelligently.

West Coast Stock Food fed to **Horses** and **Mules** will make their coats smooth and glossy, impart a vigor and "go" which enables them to render more and better service. For **Cattle** it is unequaled; it promotes assimilation of all the foods they consume and hence a strong flow of pure blood. We cannot expect them to put fat on their backs and ribs or into their udders, or to produce large, strong, healthy calves, unless the system is kept in good condition. The judicious use of this great conditioner will do much toward making the business of **Sheep Raising** more profitable. It causes sheep to gain in flesh, and given to ewes for one month before lambing time will improve their condition and increase the flow of milk, so that the lambs will be much larger and better every way. And for **Hogs** it is equally valuable. Their digestive organs have been overtaxed for generations. This food aids their digestion, purifies the blood and supplies many of the lacking natural ingredients of a perfect ration. Try it with hogs and note how rapidly they grow.

But don't take our word alone for all this. Read what other have said.

We hate to put this picture in here, because it isn't a bit pretty, but we want to show you what this calf looked like at 11 months old, before it had been given any West Coast Stock Food, and then have you read what its owner, Mr. Langstaff, says:

West Coast Stock Food Company: Elsinore, Cal., May 2, 1904.

Dear Sirs:—I have been in the cattle business for a number of years, always weaning the calves and feeding them skim milk. It is hard to keep their bowels right. We had two or three, as we thought, very good remedies. Last fall we had two calves that we could not cure, but we kept them alive for several weeks with our remedies. An old friend called on me and seeing these calves, he advised me to try West Coast Stock Food. I did not think it worth while as they were lousy and their skins stiff and scabby. There is no doubt that they would have died in a few days. I am glad to say I tried the West Coast Stock Food. **One package saved the calves,** and they have improved ever since. I am feeding twenty-three at the present time. I keep the West Coast Stock Food on hand and feed it regularly, and they have not been bothered with scours. Our best investment is what we put into West Coast Stock Food. Respectfully.

LANGSTAFF & WALTERS.

A Few Out of Many:

J. J. Thornton, Los Angeles, writes: "I am using your Stock Food and consider it the **best on the market** for colts and horses out of condition."

I. C. Milhous, Van Cleve, Iowa, writes: "As a blood purifier and all round condition powder, I know of **nothing better** than your stock food."

F. S. Rogers, Van Orin, Ill., writes: "For a blood purifier and to put the horse in good condition, it **fills the bill** and cannot be beaten."

J. B. Myers, Pasadena, writes: "I believe there is **nothing better** of its kind."

Manufactured by the

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for full particulars. Hemet Poultry Yards Hemet, Cal.

The Ornamental Garden

By ERNEST BRAUNTON

SHADE TREES.

NEXT to the pepper tree, we have seen none that proves more satisfactory, especially in the southern part of the state, than the tree known as St. John's Bread or Carob tree.

It even surpasses the pepper tree in one respect, that of cleanliness, and seems peculiarly at home in extremely dry locations. As a shade tree it is more dwarf and sturdy than the pepper and often needs trimming up in order to clear the lower branches from the ground.

While at Glendora a few days ago the writer visited the home of Mr. W. O. Kennard expressly for the purpose of looking at some fine specimens of this tree growing on the street line of his property. Those wishing a shade tree for that region should not fail to visit this place to note the great suitability of this tree to our foothill conditions.

Many other fine specimens may be seen in this garden, but it is not the intent of this article to write a description of fine or rare plants in general or at all, but there is one more tree growing there that calls for special mention. This is the Silver tree of the Table mountain, Cape of Good Hope, which will not thrive away from home, except in California. As it loves a rarified, damp atmosphere it is most remarkable to find it thriving inland so far as Glendora, even though that favored section is able to grow most anything in plant life.

OVER PLANTING.

A mistake which many make when tree-planting to beautify the home is undertaken is to forget the effect which time and growth have upon the specimens set out around the dwelling.

This condition is often seen and is a cause for regret when it is not easy to repair the blunder. The innocent-looking evergreen shrubs which are set out to adorn the door-yard between the dwelling and public highway, are not suspected of having the inherent quality of development into trees that in time will loom up and hide or overshadow the house, but in riding about the country these effects are frequently seen.

At the same time one may observe the result of not extending the system of adornment beyond the house-yard limit; for while in some cases scarcely more than the house roof is visible to the passerby, the existence of stables, hogpens and outhouses are painfully and disagreeably apparent.

Had the idea of adornment which prompted the filling up of the door-yard been liberal, or even elastic, what is now a dangerous and unwieldy surplus would have extended to the present bare and unsightly portions and there would be a more satisfactory outlook.

Few persons have the nerve to make a clearing among trees whose development has been watched with solicitude and gratification these many years; while to remove them is an undertaking which is too doubtful of success to be recommended except in special cases. But it were better to get one's courage up to the point of removal than to trim-up solitary trees and expose their bare trunks in order to look out from the windows or permit the house to be seen.

FARM FERTILIZERS.

Soot from the chimneys is one of the recommended fertilizers among amateur florists. It is claimed to ward off certain insects, and to destroy the worms in the soil, and is an excellent fertilizer and invigorator.

Ashes are also included in home fertilizers. It should be remembered, however, that the ashes from wood and not from coal fires should be used and then only small quantities in confined soil. In using the chimney soot for pot plants a teaspoonful in a pint of warm water is about the proper proportion.

LANDSCAPING RULES.

The first principle of artistic gardening is to secure as wide and unbroken an expanse of lawn as possible. This rule is one that should never be violated.

A close-cut and velvety lawn is the most beautiful and restful thing about a home. It is the foreground of all scenic garden effects. Shrubs and trees, on small grounds, should be at the outskirts or in opening bays, while all flower beds should be near walks or driveways.

A narrow yard gains apparent width when in the foreground there is a smooth expansion of green. So well do landscape gardeners understand this that it is a common expedient with them, where lots are narrow, to place the walk or drive at one side so that the body of the lawn is thrown together, making it appear a third larger than if the walk divided it. Avoid an intricacy of walks, unless it be a shrubbery. Don't plant trees too closely together if of kinds that reach a large size. Keep the lines of vision from windows and doors free and open.

FLOWER POSITIONS.

The main planting of any place should be of trees and shrubs. The flowers are then used as decorations. They may be thrown in freely about the borders of the place, not in beds in the center of the lawn. They show off better when seen against a background; this background may be foliage, a building, a rock, or a fence.

Where to plant flowers is really more important than what to plant. In front of bushes, in the corner by the steps, against the foundation of the residence or outhouse, along a fence or a walk—these are places for flowers. A single poppy or petunia plant against a background of foliage is worth a dozen similar plants in the center of the lawn. In a cozy back yard the shrubs and trees should be the main features, and bright flowers the incidents. Too many flowers make a place over-gaudy. Too much paint may spoil the effect of a good building. The decoration of a yard, as of a horse, should be dainty.

ANNUALS.

The annual flowers of the seedsmen are those which give their best bloom in the very year in which the seeds are sown. The true annuals are those plants which complete their entire life cycle in one season. Some of the so-called annual flowers will continue to bloom the second and third years, but the bloom is so poor and sparse after the first season that it does not pay to keep them.

Prepare the ground thoroughly and deep. Annuals must make a quick growth. See that the soil contains enough humus or vegetable mold to make it rich and to enable it to hold moisture. If the ground is not naturally rich, spade in well-rotted manure or mold from the woods. A little commercial fertilizer may help in starting off the plants quickly. Prepare the land as early in spring as it is in fit condition, and prevent evaporation by keeping the surface loose by means of raking.

The black man's burden—Foraker; the white man's burden—Tillman; Tillman's burden—Roosevelt; and Roosevelt's burden—The whole bunch.

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S.C. White Leghorn Eggs for hatching $5.00 per 100. Large birds.
Good Laying Strain
Take Redondo car via Gardena to Strawberry Park
Stanley Senter, Gardena, Cal.

The Vegetable Garden

By ERNEST BRAUNTON

GARDEN FERTILIZERS.

THERE are innumerable brands of mixed fertilizers offered by the men who make a business of preparing these in different proportions for various crops.

But oftentimes it will be found easier and more economical to mix the ingredients, which can be purchased for this purpose, bearing in mind that the more concentrated form in which one can get these, generally the cheaper, he will get the essential constituents, potash, phosphoric acid, and ammonia (or nitrogen.)

Most manufacturers of fertilizers always give the percentage of nitrogen in a mixture as ammonia, as this custom has grown universal from early practices. Ammonia is a compound of nitrogen and hydrogen, which has the properties of an alkaline base, and unites with acids to form salts.

Sulphate of ammonia and nitrate of soda are the two most concentrated forms in which we can get nitrogen, and they are valuable forms for the truck gardener's use. A highly concentrated form makes a great saving at times in freight and handling.

There are many advantages in mixing the constituents at home, as in that way particular ingredients can be used for special crops, or advantage be taken in using local supplies. The purity of these ingredients can be ascertained by analysis, and their proportion in the mixture can be altered to secure any desired percentage.

When buying the ingredients they should always be purchased on a special guarantee. When mixing at home the materials should be as dry and fine as possible, and should some be lumpy, as in the case of the potash salts or nitrate of soda, the lumps should be mashed before attempting to mix.

A clean floor should be used for the mixing, and the ingredients, weighed out in proper amounts, should be poured on top of each in alternate layers. Two hands, with hoes, on opposite sides of the heap, can mix the layers rapidly, at a cost not to exceed fifty cents per ton. When mixing a small quantity a wagon body is very convenient to use. Where large quantities of fertilizers are used, and sufficient power can be had, it will pay the grower to provide the necessary machinery for mixing the ingredients.

VITALITY IN SEEDS.

There is a great difference in different plants in this respect. Some seeds quickly lose their vitality, while some retain the power to germinate for a very long time.

Lettuce seeds are not usually ranked among those which retain their vitality many years, but when well kept they may be trusted for several years. Beet seed will retain their germinating power for at least ten years, under favorable conditions; cabbage, kale, radish, tomato, spinach, turnip, asparagus, broccoli, cauliflower, beans and peas, are all good for four years or more; while pumpkin, cucumber and melon seed will keep for ten years.

Onions and leek seed are not to be relied upon after the second year, and their vitality is much weaker even the second. It must be borne in mind that these figures refer to seeds that are kept under the most favorable conditions.

In the dry climate of our coast the duration of vitality will usually be found to be much greater than in any other part of the United States. Melon and cucumber seeds are more fruitful when two or three years old than when perfectly fresh, but make a less vigorous growth of vine.

In all other cases perfectly fresh seed should be preferred. In all cases get seeds from a seedsman of established reputation, and do not trust the seeds put out on commission.

GLASS IN GARDENING.

There is no point in gardening in which our growers are so deficient as in the skillful use of glass. They are too much addicted to the use of substitutes, in the shape of plant cloth, under the impression that it is cheaper.

We have had experience in the use of glass, and have tested the so-called substitutes, and know that they are not only less effective than glass, but in the long run far more costly. It is hard to understand the tardiness of our gardeners to appreciate the use of glass, since they are usually wide awake to any improvement.

Some seem to imagine that glass is only useful in the more severe climate of the Northern and Middle States. But a little experience of the great advantages to be attained by a skilled use of glass would soon satisfy any progressive California gardener that glass can be made as profitable in in all parts of this State as in the states east of the Rockies.

ROCK GARDENS.

To hear a person speak of a rocky situation as forbiding is not only to think of all these charming possibilities; it is also to be reminded of the stupendous floricultural features along the Riviera, where the once grim mountain sides are gemmed with villas set in riotously lovely gardens all the way from the saphire Mediterranean up to the misty line against the turquoise sky.

Burbank Phenomenal Berry Plants

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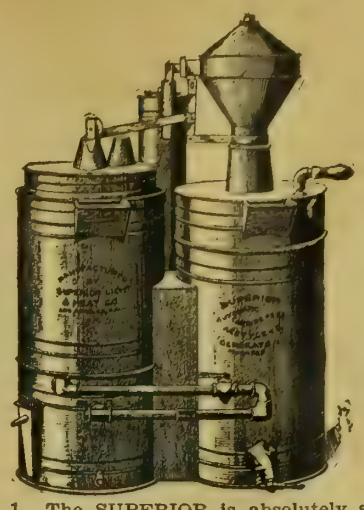

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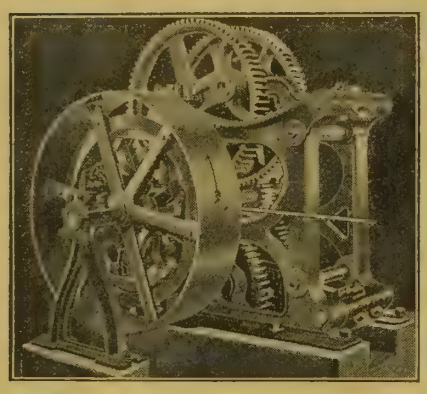

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They are fitted with improved oiling devices that can be filled without stopping. Pumps may run for weeks continuously.

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DRAINAGE WORK.

DICTOR M. CONE, the expert of the Department of Agriculture, who arrived from Washington to co-operate with Prof. Samuel Fortier in the latter's efforts to solve the problem of alkali and general drainage, is an advocate of an agricultural college in the center of the big agricultural districts of California with the principal building located on the grounds of the state university. Fresno, therefore, would be included among these sub-stations, as it represents a great raisin center. Davisville would be another point on account of its alfalfa, while Riverside or Redlands would be selected for the orange industry.

Naturally the farmers are opposed to the head institution being removed from their midst. The students prove useful from a manual labor standpoint, but the question arises, is it not better to collect the students in one place for their theoretical training and send them from time to time to the various sub-stations for the practical work? It has been demonstrated that agricultural colleges in Iowa and other states have been a source of extra expense to the university of the state because they are so far removed from the fountain head. The present legislature is desirous of reducing the $200,000 appropriation that has been asked for an agricultural college at Berkeley and while Mr. Cone admits he has no desire to mix up in state matters he is opposed to the reduction. Prof. Fortier also takes this stand and he recently appeared before a committee of the legislature on this subject.

Regarding his experiments locally Prof. Fortier made the following statement:

"A bill was passed some four years ago by the legislature to appropriate $50,000 to be used in conjunction with a like amount expended by various departments of the government. This bill was passed largely through the efforts of the Water and Forest Association of California, which comprises the leading men of the state.

"This $50,000 was divided as follows: The topographical branch of the United States geological survey received a part, the hydrographical branch another part, the forestry service a third and the United States office of experiment stations a fourth. The money was appropriated to ascertain the land and water resources of the state.

"The topographical branch mapped the arable and irrigable areas. The hydrographical branch measured the streams and located the reservoir sites. The forestry branch outlined the proper policy for the protection of the forests, and the experimental branch determined the proper way to use water and to avoid its waste. The last named was therefore employed not only to learn how to apply the water but to remove the surplus.

"We started all work on the assumption that the state would do its part. The government is willing to put up more than dollar for dollar, and as an evidence of this assertion our last pay roll in Fresno county alone was $700.

"The experiments here have been successful, and we are in a better position to demonstrate to the farmers the difficulties they are to meet wih. The water here in many places stands within 12 inches of the surface, which means 4 feet of water in a 5-foot trench. That condition has added to the cost of the experiments, but it has been of an enhanced value as far as the results go. This has been an abnormal season for rain and that we have been successful under such circumstances shows that we will be successful under normal conditions.

"We have overcome the quicksand by laying tile piping from 6 feet 9 inches to 4 feet and less from the surface. This piping or drain will carry off the water in such large volumes that there is every possibility that Fresno county will in time be able to construct a large canal and of this project I am very hopeful.

"The plan now that we are employing to drain the water from land is to first establish a sump with laterals running out from it. The second move is to build levees over the tract and apply large quantities of water so as to wash the alkali into the tiles and then into the sump where the water will be pumped out, raised 10 feet and discharged into a ditch."

Mr. Cone who was at the interview with Prof. Fortier, stated that California is interesting the government agricultural department more than any other state in the union, and the reason for this lies in the fact that she has more classes of drainage and irrigaion, more opportunities for studying entomology, plant biology, the examination of soil and every other line of the department of agriculture than any other state. California has a greater field for research because the investigtor can work here all the year round. It can also make one experiment station serve many purposes.—Fresno Democrat.

IRRIGATION IN INDIA.

"The topography of the Upper Mutha valley seemed very familiar. Had I been suddenly transported in my sleep to northeastern Arizona the similiarity in the topography of the two regions could not have more strikingly impressed me."

The foregoing sentences from Mr. Herbert M. Wilson's report on "Irrigation in India" serve as an indication of the interest and value which the work possesses for those engaged in the development of the arid and semi-arid regions of this country by means of irrigation.

India stands pre-eminent for her gigantic engineering undertakings. No other country has so vast and so fertile an expanse of territory, with such convenient slopes for the construction of canals, and at the same time such an abundant water supply. In general there is pronounced similarity between the climate and topography of the great northern plains of India and portions of our arid West, particularly the eastern slope of the Rocky mountains and the great California valley. Though the conditions of government and people are so different in India from those in America, many useful lessons may be learned from the methods of administration and legislation practiced there, as well as from the financial success or failure that has attended the construction of their works.

During the fifteen years that have elapsed since Mr. Wilson made the journey through India which formed the basis of his report, irrigation in America has made enormous strides, and immense areas of what were once considered absolutely waste lands have been turned into garden spots. In view of the keen interest felt by Americans in all irrigation maters, it is scarcely surprising that Mr. Wilson's report should be considered as timely today as when it was first published in the annual report of the United States Geological Survey for 1890-91. The demands for that publication were so great that the entire edition was soon exhausted, and as a result of increased calls, the report was carefully revised and a second edition was issued as Water-Supply and Irrigation Paper No. 87. Copies of the second edition may be obtained by applying to the director of the United States Geological Survey, Washington, D. C. The report contains detailed description of the irrigation works which exist under conditions similar to those in the United States, and is most profusely illustrated.—Maxwell's Talisman.

A woman sat up till 4 o'clock waiting for her husband. At last, weary and worn she went to retire only to find her husband in bed asleep. Instead of going down town, he had crawled into bed, which made his wife so mad she didn't speak to him for a week.

"How are you getting along with your new motor car?" asked the visitor. "Firstrate," replied Mr. Goldrocks, with enthusiasm. "We're getting to be regular autocrats."

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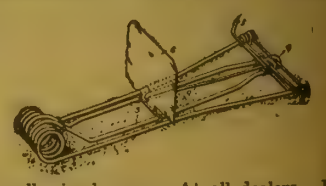

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BACTERIA IN THE HOME.

(Continued from page 235.)

bacilli of tuberculosis or a typhoid germ. Often the men are ignorant that do this bacterial counting. Of one it is told that he stood up a dairy in the Coast region with a bacterium that he had found of great size. He thought it was an elephant, but it was only a fat globule—for the dairyman had been adding some fancy Jersey cattle to his herd.

The actual seeing that the milk of ailing cows is not used, that the stables are kept clean and the persistent use of the tuberculin test will do more to make the milk supply healthy than all the bacterial counting, as it is now done. The milk sickness of the middle west, fifty years ago, has now been traced to the bread. It was made with milk emptyings; these were contaminated and transmitted the bacteria from each lot to the next, for the sour dough ball was carried from baking to baking for a leaven. With the introduction of yeast plant the disease has disappeared completely. The yeast plant is a destroyer of other bacteria and finds use in medicine as a germicide.

Watch the Refrigerator.

The refrigerator is full of impurities and should be wiped out daily, and have a weekly scalding. The ice box should be flushed with hot soda water. When I made butter for the market and complaints came of butter not keeping, I investigated the refrigerators. The idea of making them receptacles for cold scraps seemed to be universal. In reading over the weekly menus in the magizines it seems as though the holding over of meat for a week in a cooked state was not uncommon. It is better to follow the Parisian custom of buying less, with a ham or smoked meat to fall back upon in case of extra company. Some of the mysterious low conditions, the people that are never quite well, can be traced readily to these sources, simple as they seem. Bring your housekeeping up to date and do not have a lot of left overs in the refrigerators; make the family food healthy by using food fresh and in simple dishes.

Bacteria are cultivated by crowding together sick and well people, in close quarters away from the sunshine and fresh air. No sewer gas, no dirt, no malnutrition can produce bacterial diseases. The germs must be planted like any other plant. All the above enumerated causes afford easy ground for them to work in; it is fertile soil for their life.

Vegetables eaten raw, as lettuce, should be throughly washed and then put into salt water before serving.

Dust Must be Avoided.

Dust must be avoided in the home. In the bed rooms, the bed often serves as a dust trap. Strip your bed tomorrow morning and see if the slats that hold up the springs are not full of dust! This can be prevented by making a lining. Use a piece of unbleached muslin sheeting the size of the bed; sew curtain rings on the edges and ends, then screw small eyelets into the bed frame and lace the sheet into place. If the bed is of metal the under sheeting can be placed to place. The bed linen should be changed twice a week or oftener if necessary. Blankets should be aired and sunned weekly, and washed twice a year. Those that wish to sleep next to blankets can use the thin blanket sheets and these are as easily washed weekly as the ordinary cotton sheet.

The bureaus, if not solid at the bottom, permit the dust to rise up through them; a sheet of large card board will keep the dust out nicely. The bedroom closet should be cleaned out weekly, and the clothes sunned, even the cleanest of clothes need cleaning, as we find out if they are left where the moths can work on them. After the closet floors are scrubbed fill the cracks in the floor with salt and then cover with oil cloth.

Clean Towels, Windows and Furniture.

Have clean towels in quantity for every one, a clean towel a day is not too much, or if this makes the washing too great, add a rack for each member of the household, and see that they keep their towels on their own racks. Eye trouble becomes epidemic in a place by the family use of the same towels. The time may come when we will all use the Japanese towels of paper and burn them every day. In traveling these are safer to use than the towels that have laid all night in the foul-smelling, air-tight little dressing room on the Pullman.

Wash out the dusting cloths; this is as important as washing the dish towels. After the dust cloths are washed and dried if they are dipped into coal oil and then dried, they will be found to pick up the dust nicely when used again. They wash readily if a little washing soda is added to the water.

A good cheap window cleaner can be made from whiting mixed with coal oil and a little borax added. Make into a paste and rub on the glass, letting it dry there and then wash off with hot water. Use a pound of whiting, quarter pound of borax and enough coal oil to make a firm paste; apply with a cloth.

Avoid plush and velvet covered furniture, English chintz or cretonne are sensible and not dust catching as furniture covering. Heavy window curtains are equally undesirable. If you have a lot of these curtains, have them rewoven into rugs for the floor and use them on mattings. Curtains of wash material should be hung on light poles that can be lifted down and carried outside once a month when the cleaning day comes—that day when the paint is washed and the walls swept down to make everything absolutely sweet. The weekly sweeping day will not be as hard if every room is thoroughly cleaned once a month, and then there need be no annual or semi-annual house cleaning to drive the men into despair, and scare the cat away from home.

In the kitchen have plenty of windows—one whole side of glass is not too much. Take the doors off the closets; if the pots and pans are in plain sight they will be kept cleaner.

Keep Scouring and Cleaning.

The kitchen sink needs to be flushed with hot lye water and if done weekly all the fatty matter collected in the traps will be washed out.

Every spring the house should be fumigated with formaldehyde; this makes sure that the bacteria are destroyed, it also will kill off all living moths, worms in the carpets and furniture. The druggist will furnish a candle of sulphur and formaldehyde, at a reasonable price, that is very convenient to use.

The use of carpet sweeper is better than the broom, for it does not stir up the dust but removes it completely; with the broom, if wet pieces of newspapers are thrown on the carpets and swept up, the dust clings to them rather than rise to fall again on the furniture. The feather duster is another disturber of the dust, it merely changes the location without removing the dirt. All sweepings should be burned.

The servants are often untidy and they should have a place provided to bathe and the family should set them the example of a daily bath. This daily bath is needed by every one to cleanse the skin from the impurities cast off during the day.

Clean Clothes and Fresh Air.

The sanitary home requires more than a clean house—it requires clean people in it. Clothes worn during the day should hang by the open window all night. The body is relieved of it impurities by a warm bath, and other clothing than that worn during the day. Use plenty of soap all over the body including the face; the soap used should be a plain one rather than the fancy scented varieties. If the face is thoroughly cleansed every night pimples and facial blemishes will disappear. You have only to look at the clean shaven faces of the men to realize what soap and warm water with out-door exercise will do for the complexion in the way of keeping off pimples. The ladies of ancient Rome in the palmy days of Augustus used soap as a beautifier and they were right in doing so.

The remedy therefore for bacterial infection is simple cleanliness. The best prevention is found in sunshine and fresh air, clean bodies and clean habits.

The freash air renders our bodies immune to diseases, yet how we fear the air, it is a little damp! I heard a brilliant speaker telling the school children about Mr. Roosevelt. He said that when Prince Henry was visiting him, one rainy day the President sent for his overcoat and away they went for a long ride in the pouring rain. Both came home very wet. Now the President did not fear a wetting for he was a cow boy, and Prince Henry did not for he is an officer in the German army. Over there an officer never carries an umbrella; he does not consider it dignified. The rest of the men do not as they would like to be considered as hardy as the officers. Now if a whole nation can go without umbrellas, surely the people of California should not stay at home for a little rain!

When we learn that wet is not harmful to a healthy body and that our health is a matter to be attended to daily, that it must come from care of the body, we have learned the first of the great lessons of life. The next lesson is that we are our brother's keeper in matter of sanitation, that others live as we help them, by the care we take, or die by the carelessness with which we live.

Let us stay out doors at all times, let us make it the fashion to be out doors to work, to write, to play, all the sunny day-time. Then tuberculosis will lose is deadly character and other germ diseases will disappear. California with her weath of sunshine all the year can be the healthiest State as she is now the happiest, in her natural condition, in the United States.

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P. S.—See Article in Cultivator on Page 550, issue of December 6th.

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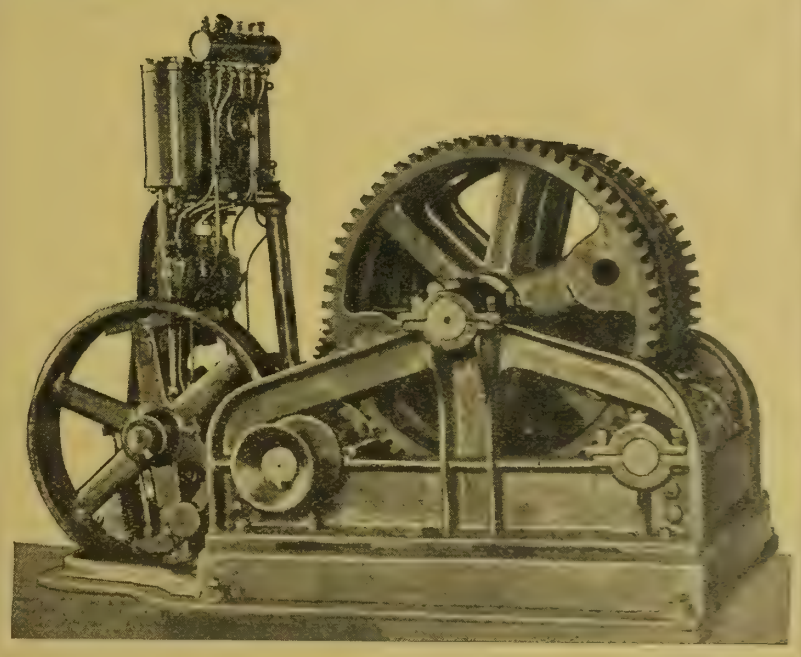

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California Cultivator

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A STATE MENACE.

One of the most serious conditions confronting California legislation is the presence of the hired lobbyist in the general assembly. It would seem that we have reached a point when the people of the state should rise in their might and demand of the legislature a rule excluding the lobbyist from the capitol building when the general assembly is in session. Never in the history of legislative assemblies have such high-handed and insolent proceedings been carried on by hired lobbyists as those witnessed this session at Sacramento. Scarcely a bill introduced which has had for its purpose the bettering of conditions of the state that has not been met at the threshold of its existence by a gang of obstructionists with the well defined object of causing its death, either in committee or on the floor of the assembly halls. So bad have become the conditions in Sacramento, that lobbyists fill the rooms of the various committees and actually attempt to dictate to members what bills shall be reported and in what manner they shall appear. If this is not sufficient cause for the legislature to enact a drastic rule of suppression of the lobbyist, where can a cause be found?

But California is not alone cursed with legislative obstructionists of this character. Kansas has them, but Kansas has dealt them a body blow by excluding them under severe penalty from setting foot in the capitol during the session of the legislature. The Nevada legislature has adopted a resolution forbidding any lobbyist from entering the state capitol during the session of the legislature for the purpose of plying his vocation. The resolution provides that any lobbyist caught plying his vocation in the capitol shall be punished according to the will of the legislature after a fair trial before the members of either house.

It is an outrage on ethics and morals to permit a hired band of ward politicians to invade our legislature assemblies for the purpose of influencing legislation, and the future wellfare of the state demands their full and complete retirement from public or private notice. Will the California assembly purge itself of these abdominable characters?

HOME SICKNESS.

When conditions surround a farm home which are unfriendly to the better nature of its occupants, how can we expect children to feel an interest in it or to care what becomes of it.

In conversation with a farmer from Fresno recently he asked us this question: "What can I do to interest my boys in the farm and keep them on it?" In reply we asked him a series of questions, one of which was: "What inducement do you offer to interest your boys?" He frankly answered "that none in particular were offered." We then told him that boys are only men in embryo and that he himself would not stay on a farm if he had no interest in it. We all know that success results from personal interest in the work in hand, and in proportion as we feel that interest will we work for results. One of the surest methods of obtaining the best efforts of the boys and girls of the farm, is to educate them along agricultural lines. In nine out of ten homes the children are unintentionally forced to despise farming. A sprouting Irish potato shoot, shut up in a dark cellar, will reach out for the light shed through a window many feet away. Many thousand children in our farm homes are reaching blindly after the light of an education, falling in weak rays on that remote home from some distant town where children are trained by precept and example for the commercial and professional world.

These same children if encouraged to seek higher education in farm work would become lovers instead of despisers of rural life.

The poverty in many farm homes, the colorless daily routine in such homes, the despair of success and the total lack of interest in all matters pertaining to the farm, as found in the homes of many California farmers, may have their hope restored, the strength of a lost self-confidence established by a more liberal observation of farm life and by a determination to make the home life brighter and richer in the things peculiar to the farm home. Are not too many farmers striving to live the lives of others in other occupations, rather than their own lives? The time is now ripe in which the farmer should magnify his calling. By magnifying his calling, by enlightening his children, he will overcome their home sickness of farm life and fasten them to agriculture for all time.

Secretary Wilson, always optimistic on the future of agriculture, tells of an instance where a farmer opened a night school for farmer boys and girls, in a rural community, and began teaching them interesting things about animal and plant life. This man pointed his pupils to the beauties of rich fields, quoted authors on scientific farming, care of animal and plant life, etc. He walked in friendly conversation through some of these fields hand in hand with youth. He talked of physiology, geology and other sciences to children who could barely pronounce the hard words, and later placed science primers in their hands. He talked of life in the home and sought to quiet the restless ambitions of the older boys and girls. Soon he aroused their interest and they began to reach out for themselves, buy books and study them. It is worthy of note that all of his scholars have found farm life the most entertaining, the most beautiful station in life. This was an object lesson well worthy of being followed today. The secret of keeping boys and girls on the farm is to interest them, and that is not difficult if we begin when they are young.

$7500 CONGRESMEN.

An exchange says; "Now that Congressmen have raised their own salaries the people are going to send some $7500 men to Congress."

This is just what ought to be done. Heretofore men of brains and character have refused to accept the office of Congressman for the reason that the salary has been insufficient to make the office attractive.

Now that it is on a par with the Federal judges and is able to compensate men of intelligence and ability, a better class of representatives ought to be secured.

It is high time the country began weeding out second-rate Congressman, who have rattled around in the seats of Thad. Stephens. James A. Garfield and James G. Blaine for these many years, and in their places seat men of brains and high character, who are imbued with the old time rugged honesty of the type of Andrew Jackson. Such men would never have permitted Standard Oil, nor railroad corruptionist's to acquire the hold on the country that exists today. We ought to begin right here in California to select our best men for Congressmen, and the work cannot be started too soon.

BUDDING OVER OLD TREES.

(Continued from page 238.)

ject a trifle beyond the bud, thus forming a protection to it.

The bands are usually left on the buds for about a month. If the spring is warm and with little chilly weather this is sufficient, but with the other kind of weather, the bands should be left on fully six weks. A heavy loss will surely follow if this last precaution is not observed when weather conditions warrant it.

After Care.

At the time of removing the bands, it can be definitely determined what percentage of buds will grow. If the leaf stem falls out when rubbed with the finger, leaving a fresh surface, such buds will start. A little experience will soon enable a person to detect at a glance, those buds which will not grow.

If the stand of buds is good, saw the branches off about an inch above the buds, wax the ends at once with grafting wax and whitewash the entire tree, branches and all, from the top to the ground. In a short time, the buds will start to grow as will suckers or sprouts from all over the trunk. These sprouts below the buds, should be pinched after two or three leaves come out on them and should not be allowed to grow any more.

When the buds have grown about eight or ten inches long, they should be pinched. This will cause them to branch and the wood to harden so that the wind will not blow them out.

After the second growth of the buds is about a foot long, it should be topped again so that the wood will harden some more and also prevent them from becoming top heavy. It is important not to allow any sprout below the buds to overgrow the buds. It will injure them by taking the sap away from them and will also interfere with their proper growth if allowed to grow up around them.

The sprouts are useful at the start in aiding the flow of sap to as near the normal condition as possible. Afterward the flow of sap should be directed to the buds and the sprouts removed.

The Following Winter.

The care of the buds during the following winter is a very important matter. Should the tops freeze down during that period, nothing will save the tree. The only thing left to do will be to dig the trees out and plant young ones. The orange seems to be able to make one good start after being beheaded, but when the head is cut off by frost the following season, the last chance for it to make a new tree is gone.

Protection is best afforded by wrapping with palm leaves, nailing the stems onto the trunks of the trees with eight-penny nails, and tying the tops of the palm leaves around the new growth of buds, leaving the tips of the bud growth projecting if they so incline.

By placing two nails in each palm leaf stem, and wrapping with shook rope, the palm leaves will serve as a protection against frost and a brace against wind. After the second summer, the buds should be able to go on without protection. There are some growers who girdle the branches above the buds when taking off the bands and leave the tops on as a protection against frost and wind during the first winter.

This is better than giving no protection, but the buds do not make as much growth the first summer as when the entire top is removed at the beginning of the first season. We have in mind cases where the budders left the tops on for a month after removing the bands. It takes at least two years for such trees to catch up (perhaps longer) with trees topped at the time of removing the bands.

The main branches, when long, are most desirable to bud into, but if laterals branch reasonably near the main trunk, these should be utilized as they leave a smaller stump to heal over. Buds should be inserted about an inch and a half apart in a ring about the branches.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

Rain at Claremont to March 1st, 19.46 inches.

San Jacinto has had, to March, 14.47 inches of rain.

The pepper growers at Anaheim have formed an association.

The valley about Oxnard shipped 35 carloads of honey in 1906.

This season over 100 sacks of seed potatoes have been planted at Brawley.

San Fernando ranchers shipped a whole train load of hay to Los Angeles last week.

A number of cantaloupe growers met and organized the El Centro Fancy Melon Growers' Association.

The total rainfall for the season at Anaheim, is 16.02 inches, as against an even 10 inches last year to date.

Almost 1800 acres of land have been planted to beets on the Bixby Land Company's property to the northeast of Long Beach.

The celery crop of 1906-07 will soon be a thing of the past. Three weeks more at most will clean up all the remaining celery in the fields.

The shipment form Escondido for the week were 194 cases of eggs, 1540 pounds of chickens, 1620 pounds of cream, and 605 pounds of butter.

It is stated that a rancher near Huntington Beach who recently sent in the last of his eight-acre crop of tomatoes, finds that he has netted over $1000.

Two and a half inches of rain fell at Glen Helen ranch in Canjon pass during the last storm. This makes a total for the season at the ranch of thirty-one inches.

The Bixby ranch near Los Angeles, consists of over 6000 acres. About 2000 acres are planted to alfalfa, 2000 to barley and the remainder of the place is given over to garden truck and dairy products.

HORTICULTURE.

The total rainfall at Pomona is now 22.15 inches.

The total rainfall for the season at Lancaster is 12.80.

Orange has had 13.60 inches of rainfall to March 1st.

Total rainfall for the season at Fairmont 22.79 inches.

The shipment of citrus fruit from here the past week was 14 cars.

East Highland has shipped about 300 cars of oranges to March 1st.

A number of tracts of oranges are being set out in the Coachella Valley.

A total for the season of 21.37 inches of rain is recorded at Chino to March 1st.

The shipments of citrus fruits from Highland up to March 1st, were 336 cars.

An orange orchard of 40 acres will be planted by F. A. Tetley of Riverside at his ranch near Heber.

F. A. Powell of San Fernando shipped four carloads of olive wood to Los Angeles last week.

The rain of the past week added nearly two inches more to the record at Ontario, making 19 inches for the season.

The rainfall for last week at Escondido was .52 of an inch, making 1.60 inches for the month and 13.70 for the season.

Colton Fruit Exchange has made public its Christmas pool on oranges. The grower got $2.00 for fancy and $1.20 for choice.

The San Joaquin Fruit Company is completeing the fourth artesian well in its fine water system which will irrigate 1000 acres of land.

The government forest rangers near Redlands, working in the mountain reserve, have just completed the planting of 35,000 young pine, spruce and fir trees in various sections of the depleted reserve.

Northern California

AGRICULTURE.

The rainfall for the last storm at Watsonville has brought the season's total up to 28.61 inches.

Strawberries and potatoes are going to form a very large part of Siskiyou county's product for 1907.

There will be Farmers' Institutes as follows: Escondido, March, 26-27; Oceanside, , March, 28; La Mesa, March, 29-30.

Frank Blakeley, of Lemoore, states that he has something like 2000 acres yet to sow to wheat and in all will seed about 4000 acres.

H. S. Mammond, government veterinarian, has arrived at Sacramento yesterday to investigate the strange fatality among the sheep.

An epidemic has broken out among the sheep a few miles west of Orland, and so far no one has been able to determine what the disease is.

The rainfall for this season at Yuba City is above the average. The storm last week registered .95 of an inch, making for the season 18.98 inches, against 12.82 to a corresponding date last year.

Holstein cow transfers: Donne Crane, Legend Ora Pina, Ontray, R. M. Holtaling to F. Vile, Gilroy. Frau Korndyke, R. M. Hotaling to R. N. Burgess, Oakland. Meg Korndyke, R. M. Hotaling to J. H. Harlan Company, Woodland.

Holstein bull transfers: Belle Korndyke Butter Boy, R. M. Hotaling to Montgomery Baggs, San Francisco. Cardoza Choice, J. C. Thorn Jr. to Jos. Cardoza, Poplar. Eusebia De Kol Butter Boy of Magda, Chas. J. Welch to Oakland Sanitary Dairy Company, Oakland. Netherland Korndyke Butter Boy, Chas. J. Welch to Oakland Sanitary Dairy Company, Oakland. Romero Paul De Kol, Chas. J. Welch to J. C. Long, Kerman. Sir Fidessa Lyons, R. M. Hotaling to Montgomery Baggs, San Francisco.

HORTICULTURE.

The rainfall at Dinuba to date is 10.52 inches.

Season's rainfall at King City to date, 14.31 inches.

Total rainfall at Dinuba 11.06. To same date dast year, 7.02

There is a scheme on foot for reclaiming 85,000 acres in the Sulter basin.

The second annual citrus fair in Tulare county, will be held in Lindsay this fall.

Pear blight in the Sacramento valley, and especially in Sacramento county, is well under control.

Hotle Brothers, of Sebastopol, intend to have the largest Gravenstein apple orchard in this section of the state.

Offers of $7.50 per ton for tomatoes, have already been made in Sacramento and the price will probably go higher.

Eight thousand acres of land, near Terra Bella, suitable for oranges will soon be subdivided and placed on the market in small tracts.

The tree and vine planting in Sutter county will soon be finished for this season, and there has been more activity in this line than for many years past.

Apricots are in full bloom and, with ordinary weather, and no set backs, we shall have a good crop of this fruit. Almonds are already setting, and cherries are coming out. The season has so far been excellent for fruit

The rainfall for Redding for the present season will exceed that of last year by many inches if the present record is kept up. During the twenty-four hours ending at 7 o'clock Friday morning the precipitation was .70 of an inch. This brings the season's precipitation up to 26.78 inches, against 15.23 inches at even date last year.

An Opportunity to Make Money

MANY lines of horticulure have proved money-makers in California. The cherry, the Bartlett pear, asparagus, celery, the Washington navel orange and many other products have all brought millions of money to the state and besides induced many an Easterner tired of the cold of Eastern winters to come to this state where money-making opportunities exist with more livable conditions. Sometimes, through lack of understanding of conditions, indifferent success has been given to some of those soil tillers. More often a complete success has been secured.

To see the range of these products of the soil extended so as to give more opportunity to the newcomer as well as to the farmer already here, gives pleasure to every well-wisher of the state. For that reason much space has been given to making known the merits of anything which looks toward greater wealth producing power. The latest of these money-makers to be introduced are the improved forms of rhubarb, brought first to the attention of growers by Mr. Luther Burbank and propagated and distributed largely by Mr. J. B. Wagner of Pasadena.

We have often referred to Mr. Wagner's success with the Crimson Winter Rhubarb, and, further to his remarkable successes with a new and much improved variety now known as "Wagner's Giant." This latter variety is as yet not ready for distributing, as formerly explained, but improved forms of the Crimson Winter are in Mr. Wagner's experiment grounds, which he can now send out in large quantities.

J. B. Wagner, showing a rhubarb plant eleven months old, with a root more than four feet long. Also showing bunch of stems 18, 28 and 34 inches long.

Many large plantings have been made from Mr. Wagner's nursery and in almost every case the first year's output has more than paid for the cost of the plants.

In fact Mr. Wagner will supply plants sufficient for any large planting on a contract to take for his pay the first year's output, or a half of each of the first two year's output. In other words he shows his faith in his own goods.

The plants may be planted 1½x5 feet, which makes 5800 plants to the acre, which allows plenty of space to cultivate between rows. A nice sandy loam is best, but the plants have shown wonderful adaptability to almost any condition with which they have to do.

The greatest factor is, get good plants, well grown, of known pedigree; then fair care will bring wonderful results. Growers frequently net $1000 to $1200 per acre; under ordinary conditions it is safe to expect from $600 to $800 per acre first year, and better returns in after years.

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

Buy the World's Famous Egg Food No. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and breed. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for greatest batch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be isued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. FILCHER, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

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Main Offices and Factory, Petaluma, Cal., Box F.
Los Angeles, 505 South Main Street.
San Francisco Office and Salesroom, 33 Market St.

BEMIS PLYMOUTH ROCKS
BARRED AND WHITE

PRIZES WON At Alameda County Poultry Association Show, Oakland:

21 Regular Prizes.
4 out of the 5 Specials given by the American White Plymouth Rock Club.
Silver Cup for the ***best collection*** in American Class.
Silver Cup for ***best display*** in American Class.
Hines Silver Cup for 10 Best White Plymouth Rocks in Show.

I am able to ***furnish*** the ***best*** birds and eggs at moderate prices. I cannot furnish large lots for incubators.

MRS. FLORENCE E. BEMIS, 1757 NINETEENTH AVE., OAKLAND, CAL.

S. C. White Leghorn Eggs

For Hatching, from Captain Mitchell's Strain.
Large Birds. Prolific Layers. Large White Eggs.
Order Books Open for 1907 Season.

The Lincoln Avenue Poultry Yards

Carl C. Curtis, Owner, Pasadena, Cal.
Successor to Captain E. Pryce Mitchell
Lincoln Ave. and Ventura St.—Altadena Cars

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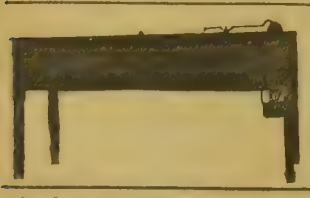
Excelsior Chick Food

Excelsior chick food is a perfectly balanced ration for your growing chicks. Will raise the largest possible per cent. of your baby chicks. All pure food, no shriveled grain and filler used in its manufacture. Absolutely clean and free from dust. No waste.

The Best Food on the Market

Ask for Excelsior. If your dealer cannot supply you write us. Circular free if you mention the Cultivator.

Del Monte Milling Co., 242 Central Ave., Los Angeles, Cal.



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They Are the Best on Earth
Principal Incubator Co., Graton, Cal.
Send for New Price List

Altadena Buff Orpingtons

N. HAYDEN & CO., BOX 1001, PASADENA

You can win with my stock and eggs because I have won and am winning. Matings this year very fine. Inspection invited. Write me your wants. Eggs $2, $3 and $5 per 15.

Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

TURKEYS.

I HAVE some letters in my mail box this week the replies to which may interest others as well as the writers.

One writes. "I wish you would tell us something about raising turkeys. Is it too early to set turkey eggs? I have no hens wanting to sit, and I do not know if turkey eggs can be hatched in an incubator and if the turkeys can be raised in a brooder?"

Young Turkeys Delicate.

Turkeys are considered to be very delicate little things when they are young, but are quite hardy after they mature or "sport the red" as it is commonly called. This comes between the ages of two to four months according to the season and according to the way they have been cared for and fed.

I lived for some years in the land of the wild turkey, and there I learned many things about raising the tame turkeys, and found that after all, in raising all fowls artificially, the nearer we can copy Nature, the greater will be our success. Let us see how she brings up her young turkeys.

The haunts of the wild turkey are always near fresh water, usually a fresh spring on a hillside or a running creek, and they never wander far from this. This is our first lesson. A supply of pure fresh water is absolutely necessary. It must be clean and pure, sheltered from the sun and so placed that they cannot get into it. I have lost several from their getting into the wash-tub or the stable bucket left with water in it.

Proper Food and Drink.

Drinking fountains can be bought at any cost at the poultry supply stores, or an excellent little fountain can be made out of a tomato can.

Make a nail hole about three-fourths of an inch from the edge, or cut a notch half an inch deep in the edge, fill the can with water up to the nail hole, put a saucer over it and quickly invert it holding the saucer tightly to the can. The water will leak through the hole into the saucer and the little birds cannot get into it to wet or drown themselves.

Young turkeys will not eat for twenty-four to thirty-six hours after hatching, and no food should be offered to them the first day. The mother must be fed. If the nest in which the little turkeys are hatched is so situated that I can put a small pen in front of it, I leave them there a few days, if not, I move them to a suitable place.

The young must have grit as their first food, for they will soon have bowel trouble if food is given them before they have "teeth" to grind it. Lice are enemies to little turkeys. Before giving the little poults to the mother, or putting them into the brooder, I dust them well with "Buhach" or "insectonos" and I continue to do this once a week until they are too large to handle.

Look for lice on the head and on the quill feathers on the wing and rub the powder well into them. Lice and over-feeding kills thousands of little turkeys every year, they are the two great causes of mortality amongst young turkeys.

Lessons From Nature.

When I lived in the land of the wild turkeys, I learned many things that were new to me, and especially about feeding the little tame turkeys. One thing was that they require very little food at first; in fact if they are under-fed they will grow bigger and stronger than if over-fed.

I was told there never to feed corn, cracked corn or corn-meal until they had "sported the red;" that is, until they showed red on the neck and head. The reason given for not feeding corn was that it would sour on their stomachs.

I have since found that corn (either cracked corn or raw corn-meal) does not become softened or partly digested in the crop, but passes to the gizzard in its hard state, and before the gizzard has time to grind it up, it ferments, bowel trouble ensues, followed frequently by death. So I avoid corn.

The First Food.

The first food is chick grit or coarse sand and a drink of milk (sweet skim) or water. Then when they are twenty-four hours old I put new laid eggs in cold water and boil they twenty minutes, chop them up finely shell and all, add equal parts of dry bread crumbs, and feed this dry, taking away what they leave and feeding the mother separately.

The next day I feed the same, but add very finely chopped lettuce, or dandelion or green mustard leaves and tender onion tops. This is their breakfast and supper. For dinner they have a little curd (Dutch cheese) made from clabber milk.

In a few days I add a little cracked wheat to their supper, and frequently, if short of bread crumbs, add rolled breakfast oats to the egg and onion. I always chop up one onion a day with the egg and bread crumbs unless the tops are very tender. I know of a man who raised his turkeys on an exclusive diet of onion tops and Dutch cheese and they did well. Onions are very healthy food for both chickens and turkeys; they prevent worms and gapes and cure colds, so I use them very freely.

When they are a few days old, I commence to add wheat to their food and at two weeks I gradually arrive at giving them wheat and rolled oats for breakfast, in the middle of the forenoon a head of lettuce to tear up; at noon, Dutch cheese, and about four o'clock their supper of egg, bread crumbs or rolled oats, lettuce and always an onion chopped fine.

Milk they have at least once a day, milk sweet or clabber, or curd seems to suit them well. I suppose it partly supplies the place of the insects and worms they would find in the wild state.

Causes of Mortality.

The two chief causes of mortality in turkeys, over-feeding and lice, can be easily avoided. Over-feeding kills more turkeys than do lice, and if it does not kill them, it stunts their growth, but unfortunately until they begin to die at five or six weeks of age, one scarcely realizes they have been over-fed.

They have voracious appetites and if the food is left before them they will eat too much and it takes only a few weeks for them to eat themselves into their graves. In the wild state they hunt for their food and take it leisurely.

They find just one grain at a time; just what they can digest slowly, and only enough goes into the circulation to keep them in perfect health, without over-taxing the digestive organs and the liver. The mortality among turkeys, especially among young turkeys, is chiefly from liver complaint brought on by over-feeding.

Turkeys require plenty of fresh air, but no draughts, keep them in a coop, if a coop is necessary, with one side entirely open, but let that side be away from your night breeze, and make the rest of the coop air-tight, and when they commence to roost, let them roost in an open shed. Trees are their favorite roosting places, but if you fear night marauders, a shed will do as well.

General Directions and Precautions.

I want to emphasize that little turkeys must have green food in abundance; they should have it at almost every meal, chopped with the other food and if possible, should be brought up free or on a clover lawn. I have gone into these minute particulars because I never lose a turkey after they are hatched, except by accident, such as having their heads crushed in a brooder, or getting drowned in the stable pail or cows' water-trough.

I am writing this in answer to a farmer who wishes to raise a few turkeys. Turkeys can be raised in brooders. I have done so myself for many years, but they must not

White Wyandottes
EXCLUSIVELY

The Reliable Strain triumphant over all

At the L. A. C. P. A. Show
January 7th to 12th we won

1st Cock ***2nd Cockerel***
2nd & 4th Hen ***3rd Pullet***
3rd on Pullet Trophy

Six ribbons and four Silver Cups, one being the Produce Exchange $50 cup for best display of TABLE FOWL.

Utility combined with quality tells the tale of the "Bird of curves," the best layers, the best payers, the best stayers. Am booking orders for eggs from $1. to $3. per sitting. Write for booklet telling all about my breeding pens.

A few high scoring vigorous Cockerels for sale $5 to $15

Unique Poultry Farm,
F. A. Mason, Manager.
465 Custer Ave. Los Angeles, Cal.

N. B. I am Pacific Coast agent for the celebrated Reliable Incubators and Brooders. The best on earth; write for prices laid down at your door.

Santa Ana Poultry Ranch

LINE BRED
WHITE PLYMOUTH ROCKS
EXCLUSIVELY

We won as follows at the Poultry Breeders' Society Show: 1st Cock, 1st, 2nd, 3rd and 4th Hens, 2nd and 3rd Cockerels, 4th and 5th Pullets and 2 Silver Cups.

Some Extra Choice Cockerels For Sale. Eggs, $2.50 per 15, $10 per 100.

RHODA E. DURFEE
1110 W. First St., Santa Ana, Cal.

Buff Wyandottes
2d Prize Cock For Sale A close 2d to my 1st cock. Sire of 1st and 4th cockerels at late Breeder's Show. Write for particulars. Stock and eggs on hand.

O. S. Hoffman,
San Jacinto, Cal.

White Rocks and Black Minorcas
They are beautiful birds; Rocks as white as snow, Minorcas black as a crow. Cocks from W. M. Humphrey's and Harry E. Rose's yards. Eggs for sale. Best pen, $1.50 per setting of 15, or $7.00 per hundred. Second best, $1.00 per setting of 15, or $5.00 per hundred.
Chas. S. Hunt, El Monte, Cal.

Prize Winning White P. Rocks
Won 1st on cock, 1st on pullet, special for best pair, Petaluma Incubator for best pair in American class at Los Angeles show, 1907, the largest ever held west of Chicago. Stock and eggs for sale.

AMELIA W. SLY
"Oakhurst" R. D. 1 Hollywood, Cal.

White Minorca Cocks and Cockerels and White Wyandotte Cockerels For Sale.

Eggs of Both Varieties from High Scorers and Great Layers.

$1.50 per Setting, $8.00 per Hundred

S. W. Morgan, Sunnyside, San Diego Co., Cal.

Willard Poultry Farm
Hynes, Cal.

WHITE WYANDOTTES WHITE MINORCAS
INDIAN RUNNER DUCKS

Winners at late Los Angeles Shows. White Minorca and White Wyandotte eggs, 1st pen, $3; 2nd pen, $2 per 15. Duck eggs, $2 per 13.

Mrs. Hungerford, Mgr., Hynes, Cal.

Eggs for Hatching
Thoroughbred White Rock eggs for hatching at $1.50 for 15 $6 per hundred.
Mammoth Bronze Turkey eggs, 20 cents each.
Also a dozen choice W. R. cockerels and two M. B. gobblers for sale.

Jennie R. Frater Charter Oak, Cal.
Home Phone 2179

White Rocks The best kind and the best of the kind. Eggs until further notice, 15 for $1.25 or $5.50 per 100.
White Plymouth Rock Ranch
J. T. Davis, Prop. POMONA, CAL.

Single Comb White Leghorns Exclusively
Eggs for Hatching, $1.00 per 13, $5.00 per 100. High Fertility Guaranteed. Phone Park 682.
J. E. Beadle 901 St. Louis St., Los Angeles, Cal.

When writing advertisers mention Cultivator

be in the same brooder with chickens or ducks. They can also be hatched in an incubator, but I prefer to hatch under hens, and to have the turkey hen mother them. My reason for preferring a turkey hen is, that she will never allow them to over-eat.

She will take a few mouthfuls herself, then walk away slowly from the food, calling them to follow her while a fussy good old Plymouth Rock hen will call them up and feed them till every little turkey is stuffed full, with the result that they are over-fed. So in feeding little turkeys mothered by a chicken hen, I am very careful never to leave food before them.

Califronia's beautiful valleys are wonderfully adapted to turkey raising, and I do not see why there are not more large ranches of turkeys like that of Mr. Dan Myers of Hemet, in the San Jacinto valley. He keeps about 1500, turns them out with turkey mothers when they are about ten days old, and lets them "rustle for their living" in his broad wheat fields. His turkeys are never sick, never have liver trouble, are easy to raise and bring in a good income for the holidays.

THE WHITE WYANDOTTE.

How often have I been asked by persons starting in the poultry business, "What breed would you advise me to start with?" My answer has invariably been "The White Wyandotte, the business hen of the 20th Century." When asked to give my reasons for putting the "Bird of Curves" ahead of the other standard varieties, I can tate them in a few words, and with your kind permission will give them in the columns of your valued paper, hoping that this article may be read by some brothers or sisters who are making up their minds on this most important question.

Having been born and brought up on a farm away back in rock-ribbed New England, I have had the handling of fowls ever since I could get around and feed them. It was not until 1888, however, that I took any interest in the "Fancy" and started that year with a pen of Golden Wyandottes. I bred this variety exclusively until 1892 when I went into the poultry business exclusively, and raised Light Brahmas, Black Langshans, Barred Rocks, Brown Leghorns, Black Minorcas and Golden and White Wyandottes.

We must all acknowledge that the above breeds are good fowls and have many good points, but after some years of experimenting and thoroughly tying them all out, I weeded out the different breeds until the White Wyandottes stood out alone, pre-eminent, as being the "Business Hen of the Twentieth Centry." Since that time I have been loyal to this variety of the popular Wyandotte family, and I feel quite safe in saying that there are more fanciers raising White Wyandottes today than any other variety unless I except the Barred Rock.

When in Boston a few years ago I had quite a talk with a prominent broiler man who told me that he had raised the Barred Rock and White Wyandotte side by side for years, but finally discarded the Rock and now raises the White Wyandotte exclusively, as he found that they matured earlier for the market than the Rocks. He said "If you try to raise Rocks and Wyandottes in the same pen, the experiment will prove to you that the Rocks will go clear off their legs, while the deep-breasted,-plump bodied, smooth-skinned, active little Wyandottes will take their medicine five times a day and grow like weeds on it." My own experience has been that they grow faster, have a steady growth (and not by fits and starts as some other breeds do, which grow awhile, stop and take on a coat of feathers, and then fill out) but they keep right on growing all the time, and are always plump and compact, instead of slim and "gawky" as the Rocks are.

With all due respect to our brother fanciers who pin their faith on the Rocks, both White and Barred, I am sure that way down in their hearts they will acknowledge that the Wyandotte has by far the more beautiful shape of the two. As broilers, fryers

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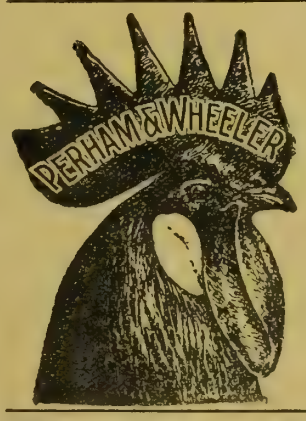

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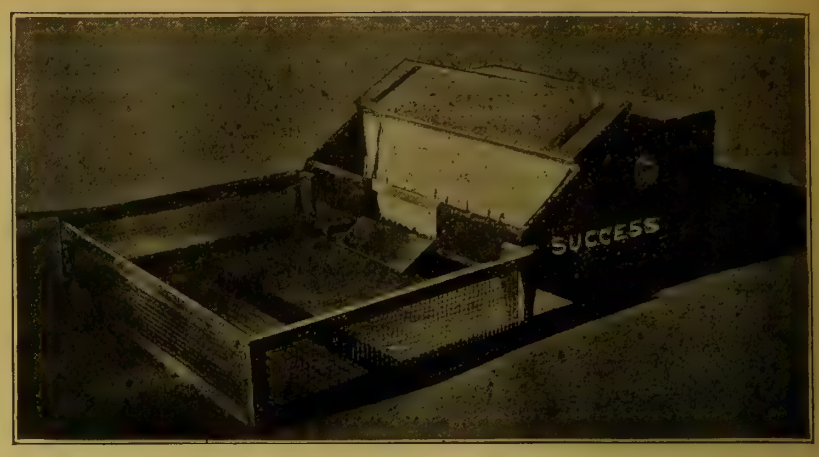

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My yards are modern in every respect and I invite inspection. Think of us when you think of White Leghorns.

My best pens are made up of stock from the first prize winners at the great show at Madison Square Garden, New York, 1905 and '06.

All stock sold on a guarantee to be as represented.

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Our yards are now mated for the season; containing winners of nearly 100 Prizes, Specials and Cups at California's leading shows. Our handsome Mating List and Catalog describes them all. Send for it today; it is free. Our birds are bred for utility and heavy egg production as well as beauty. All egg orders booked in rotation. Satisfaction guaranteed.

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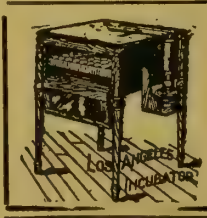

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The Columbian Wyandotte Specialist

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Already the talk of the poultry world, 102 pages filled to the brim with valuable information drawn from actual experience.

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S. C. White Leghorns—Large eggs, great layers. *Eggs 75 and $1. per 15, $4. to $5. per 100* according to matings. All hens weigh 3½ to 5 lbs. Satisfaction guaranteed.
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EGG $1.50 Per 15, $6. per 100
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We won on White Rocks, Barred Rocks, White Wyandottes, Buff Leghorns, White Crested Black Polish.
EGGS FOR SALE. SEND FOR CIRCULAR.
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The World's best layers.
Write for Folder.
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Heavy Laying, prize winning Strain. Eggs $2 for 15; Baby Chicks, 20 cents each. CANNON POULTRY CO.
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Take Slauson Ave. car to 29th St., walk 1 block west

MY EXHIBIT OF
WHITE, BUFF AND PARTRIDGE **Wyandottes**
Won 26 Ribbons and Special Prizes at the Poultry Breeders' Show, 1907
R. D. Box D27 L. E. BERKEY, Fullerton, Cal.

and roasters when young, and layers and mothers when grown, they cannot be excelled by any breed.

The shape that the standard of perfection requires for the Wyandotte family is one that I consider as near perfection as one can see in a fowl, and I fail to see where it can be improved. It is the "Bird of Beauty" and of curves. It catches the eye of anyone whether he be a chicken "crank" or not, whether seen in the show room or the breeding pen. While the standard does not call for a Wyandotte shape in a Rock, yet I have noticed that one with a Wyandotte shape presents a pleasing appearance and is greatly admired. "Why is this?" you ask, and the only answer we can give is that it gives to the bird that fullness and compactness of form that is possessed by no other breed.

It is rather a difficult task to find words to describe the Wyandotte shape, although the word "blocky" expresses it better than any other word I can use. This distinct shape is very striking even when the chick is first hatched and stays with it to maturity. Ever since I first raised Wyandottes I have felt that they came nearer to having the ideal shape than any other breed, and as time goes by and they are bred nearer and nearer to perfection, it seems to me that they will eventually become the most popular fowl in the whole catalogue of birds.

The close rose comb is another splendid feature of the Wyandotte family, and gives to the head a very pleasing appearance, such as a high single comb could not give. In the East where I made my first venture in the poultry business, the comb was a great consideration on account of the extreme cold weather nipping the large combed varieties and putting them out of business. In this great and glorious climate the cold weather does not enter into the matter at all, but still there is a beauty about a neat rose comb that I cannot see in a single comb.

One of the best points about them, and one that will appeal to anyone who is raising chickens or contemplating starting in the business, is their ability to lay good sized eggs all the year around, instead of certain seasons. I can truthfully say that I get nearly as many eggs during the fall and winter as I do during the spring and summer, when eggs are plentiful with everyone, and this without feeding to force egg production. It is for the above reasons that I will back up the White Wyandotte as being the best all-purpose fowl in existence today. They are easy to breed, and with proper mating one gets fewer culls than in any of the particolored breeds. As egg-producers they cannot be beaten even by the vaunted Leghorns, and when size is considered the latter variety is clear out of the running.

What a beautiful picture a flock of White Wyandottes make on a piece of green lawn! Surely they cannot help but fill the bill and please even the most critical chicken fancier.

A great many people rush into the "chicken business" with little if any previous experience, except what they have gained from books, intending to raise a great many varieties, do things on a large scale and make barrels of money. They can see no way for failure to overtake them and (on paper) they figure out their profits. Alas! what an awakening comes to their dream of "easy money" for it does not take many months to have a rude awakening and they find too late, that their dream is o'er, and there is no "easy money' in the poultry business. Perhaps a small per cent. of them succeed, but it is a very small one, and even these do not succeed until they have gone through the great school of experience, for which they have paid dearly in a great depletion of their pocketsbooks and many hard knocks.

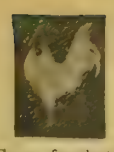
How much better it would have been for them to have started in a small way, learning the details of the business (which can only be mastered by experience, and then gradually increase as success and practical knowledge come to them.

My advice to new beginners is to go over the ground carefully, pick out the breed that appeals to you most (be sure it is the Wyandotte and you will make no mistake) get some good birds and study them from every standpoint, until you know them thoroughly. Then it will be time to increase and branch out into the business. It is in this way only that people can succeed in this most fascinating of occupations.

Now then, fellow fanciers who swear by the Rocks, Orpingtons, Leghorns etc., let us hear from you as to why you do not drop these breeds and take up the "Bird of Curves" the business hen of the 20th century. I have endeavord to present a few reasons why the Wyandottes are the best all-purpose fowl and I hope sincerely that they may have some weight with the new beginner. I will be glad to hear from any of the readers of the Cultivator, and will be glad to give advice on any subject akin to the breeding, feeding and general care of the birds.

In some future number I will take great pleasure in telling the readers of the Cultivator how I mate my breeding pens for special results, as I am breeding the "stocky," short legged kind that lay, pay and stay. Let us hear from the rest of the boys and the ladies as well on their favorite breeds.—F. A. Mason, Los Angeles.

The cassowary is a bird
That's hard to capture, very.
Folk hunting for her plumes have made
The cassowary wary.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PRICES—5 Ducks and 1 Drake, $6; 10 Ducks and 2 Drakes, $11; crated and delivered to express company. Must be sold by March 10th, so if wanted order at once. Send for lustrated catalogue.

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Eggs from 200-Egg Hens, $1.50 per 15, $6.00 per 100
From Second Best Pens, $1.00 per 15, $5.00 per 100
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Blue Andalusian Eggs, $2.00 per 15, prize winning birds
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Winners at Breeders Great Show, 1907
COCKS, 2nd, 3rd and 5th; HENS, 1st, 2nd, 5th COCKERELS, 2nd, 4th and 5th; PULLET, 1st, 2nd and 4th; PEN, 2nd. Club's Special Cup for best male and female; 5 Special Ribbons; also Special Ribbon for best COLORED female; Ribbon for best shaped female. Stock and Eggs in any quantity. Eggs, $3 and $5 per 15, $20 per 100.
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Standard Bred Poultry
Buff and Brown Leghorns, Buff Orpingtons, Columbian Wyandottes and Bronze Turkeys
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Won at Los Angeles Show, the largest ever held on the Coast, 225 Barred Rocks in class, as follows: 1st, 2nd and 5th Pens; 1st, 3rd, 4th and 5th Hens; 1st, 2nd 3rd and 4th Pullets; 2nd Cockerel. Barred Rock Club Cup for Best Display; Association Cup for Best Display, and Three Incubators, one for Best Pen in Show, all breeds competing.
Choice Stock for sale from same mating that I bred my prize winners from. Prices reasonable. Eggs, ***$3*** and ***$5 per 15.***
Chas. E. Smith, Gardena, Cal.
Take San Pedro electric cars via Gardena to Smith's Crossing.

Chamberlain's Perfect Chick Feed

World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This is the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

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FOR SALE — LONGWORTH PROLIFIC Strawberry Plants, $2.50 per 1000. "Dollar" strawberry plants, $2.50 per 500. TRIBBLE BROS., Elk Grove, Cal.

A LIMITED QUANTITY OF MAMMOTH blackberry rootings, $2.00 per 100. Address WM. CARTER, Box 54, Modesto, Cal.

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INDIAN RUNNER DUCKS—A WORLD beater for producing Eggs. Pure strain. $1.00 for 13; $5.00 for 100. Black Langshans, Prize Pen. $2.00 for 13. F. M. BENDER, Corona, California.

FOR SALE—INDIAN RUNNER DUCK eggs from choice stock, $1.00 per setting of 13; incubator lots at short notice at $5.00 per 100. F. J. QUANT, Madera, California.

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PINK PIGS PAY—FOR SALE—THOROUGHbred Duroc-Jersey Pigs, both sexes, eligible to record; pedigrees furnished; 7 months old and in good flesh. Price $15.00 each, crates free. M. EVERHAM, R. F. D. 2, Box 73, Kingsburg, Cal.

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EGGS FOR HATCHING.

FOR SALE—EGGS FOR HATCHING—THOROughbred Plymouth Rocks, Orpingtons, Reds and other large breeds, $1.50 and $2.00 per 15; $6.00 to $8.00 per 100. Leghorns, $1.25 to $1.50 per 15; $5.00 to $6.00 per 100. Pekin and Indian Runner Ducks, $1.00 to $1.25 per dozen; $5.00 to $6.00 per 100. Bronze Turkeys, $2.25 per dozen. Geese eggs, 25c each. Other kinds, prices on application. The higher-priced eggs are from special matings, bred to laying strains and prize stock. The cheaper ones are from choice utility fowls. Our eggs are either from our own yards or from yards that are under our personal supervision. We test our eggs carefully, and guarantee 75 per cent. fertility. We also handle thoroughbred poultry of all kinds. KLONINGER BROS. CO., 838 South Main street, Los Angeles, Cal.

EGGS FOR HATCHING FROM THOROUGHbred Rhode Island Reds and Orpingtons; $1.00 per 15, $5.00 per 100. MRS. B. F. DRAPER, R. F. D. No. 1, Norwalk, Cal. Residence, Martha's Vineyard, Santa Ana Electric.

BUFF ORPINGTONS—I WILL HAVE A few settings of Buff Orpington eggs to spare from best stock obtainable. From St. Louis and California prize winners. $3.00 per 12 eggs. MRS. N. F. MORSE, Fullerton, Cal.

EGGS FOR HATCHING—S. C. RHODE ISland Reds and heavyweight Black Minorcas, $1.50 per 13. MRS. L. M. RUCKER, R. F. D. 3, Chino, Butte Co., Cal.

GOLDEN LACED WYANDOTTES. Blue Bibbon winners wherever shown.— At Oakland 1907—won four, first —three, second and two third premiums.—Eggs from prize-winners $1.50 and $2.00 per 15. Fifty choice birds $1.00 to $2.00. Eggs proven infertile will be replaced if returned to me at buyer's expense. J. P. ENGLISH, Arroyo Grande, Cal.

ORPINGTONS AND REDS; PEKIN DUCKS—13 prizes on 16 entries, also silver cup, at "Breeder's Show" 1907. Eggs now ready, can't help but hatch winners, we breed them that way, fifteen years' experience counts. Our stock are great layers, rapid growers, top market quality, we guarantee satisfaction. GOODACRE BROS., Box 45, Compton Cal.

McKINLEY POULTRY FARM—BREEDERS of buff and white Wyandottes. Member American Buff Wyandotte Club. Golden Seabright and Pyle Game Bantams. Eggs $3.00 and $2.00 per 13. Take San Pedro Interurban car to McKinley, first house north. BOX 11, R. F. D., Gardena, Cal.

BLUE ANDALUSIANS—I did not exhibit this year but have better stock than ever. Eggs for hatching, $2.50 per 14. Incubator lots $7.50 and $10.00 per 100. No fear of inbreeding as we have three strains. MRS. T. R. GRIFFITH, 3111 Walton Ave., Los Angeles.

WHITE LEGHORN AND WHITE WYANdotte eggs for hatching, from extra choice, trap-nested, bred-for-eggs stock. Leghorn eggs $5.00 per 100; White Wyandotte eggs $1.00 and $1.50 per setting, $6.00 per 100. F. T. McLAUGHLIN, Gardena, Cal.

BLUE RIDGE POULTRY YARDS, W. H. Brown, Prop., 128 Ave. 32, Los Angeles, Cal. Breeder of Blue Andalusians. Won more first prizes than all our competitors combined. All specials went to our strain. Eggs $1.50 and $2.00.

S. C. WHITE LEGHORN EGGS FROM THE bred-to-lay Blanchard strain. Large birds. $1.00 for 15; $6.00 per 100; Free city delivery. C. M. GIBBS, R. F. D. No. 4, Los Angeles, Cal. Phone W. 591.

FOR SALE—PURE BRED STOCK, S. C. White Leghorn Eggs. Large eggs, great layers, eggs for hatching only. $1.50 per 15; $6.00 per hundred. RICHARD POWERS, Anaheim, Cal.

FOR SALE—EGGS FROM TWO PENS OF extra fine White Plymouth Rocks, $2 per 13. FRANK H. THOMAS, 1820 Hobart Blvd., Los Angeles, Cal.

When writing advertisers mention Cultivator

FARM LAND.

FOR SALE—BLACK VEGETABLE SOIL 12 to 18 inches deep yielding greatest average crops raised in North America. Only $15 to $25 per acre. One-fourth down, balance 5 years at 6 per cent. Address, W. R. GILSON, 121 E. 4th St., Los Angeles, Cal.

$1250—10 1-3 ACRES LEVEL LAND, 3 ROOM house, barn, well, family orchard; an ideal chicken ranch; price $1250. 15 miles from Petaluma. 5 miles from Santa Rosa WM. MAGER, SANTA PAULA, CAL.

INCUBATORS.

W. H. KING, BELL, CALIFORNIA, SAYS: "Put 216 chicks in three of your Reliance Brooders, at 8 weeks I transferred them to larger quarters. I had lost only 5 chicks. They are strong and vigorous." Pretty good record, and they are only $6.00. We also sell the metal parts separate (patent lamps, etc.) $2.00. Send for descriptive circular. KLONINGER BROS. CO., 838 South Main street, Los Angeles, Cal., agents Cyphers Incubator Co.

LIVE STOCK.

GUERNSEY BULL FOR SALE—A REMARKably fine thoroughbred Guernsey bull will be sold for want of use, cheap. R. S. COX, San Marcos, San Diego Co., Cal. R. F. D. No. 1.

PUPPIES.

FOR SALE—SCOTCH COLLIE PUPPIES. Pedigree furnished with every sale. $15 and $25. Write for description. E. B. VARIAN, 539 Douglas Bldg., Los Angeles.

RANCHES FOR SALE.

RANCH FOR SALE—240 ACRES IN Mariposa Co., 40 acres under cultivation, balance easily cleared. Plenty of water. Suitable for hay, grain, stock raising, or apple orchard. Price $900. For information, address CHARLES GLISCINSKI, Los Angeles. California.

TREES.

FOR SALE—4000 VALENCIA AND 1000 W. Navels; one year buds on three year roots, clean and vigorous; buds taken from bearing trees. F. E. CHAPMAN, R. F. D. Box 34, So. Craig Ave., Pasadena, Cal.

FOR SALE—MISSION, BLACK SPANISH, and Taft's Kadola Figs; fine trees at 25c and 35c. Order quick if you want them. H. L. BAUER & SONS, 737 South Spring Street, Los Angeles.

TURKEYS.

FOR SALE—11 TURKEY HENS; SOME ARE laying; all have mated with full-blood bronze gobbler. Price $2.00 each. Address R. D. BOX 68, Santa Ana, Cal.

POULTRY.

HARRISON'S R. I. REDS AND WHITE Rocks. The best out West; 12 awards at Poultry Breeders' Show, including 1st and 3rd Red cockerels, 1st and 2nd Red pullets in a class of 36 pullets; White Rocks 1st pen, 1st and 3rd pullets and 3rd cock. New circular. Eggs $2.00 for 15, $5.00 for 50, $8.00 for 100. LAKE AVENUE POULTRY YARDS, 757 N. Lake Ave., Pasadena, Cal.

ARMOUR'S BEEF SCRAPS, MEAT MEAL, and Blood Meal for poultry feeding are highest in digestible protein. If your dealer does not handle them write us direct. Circular containing formulae free. THE ARMOUR FERTILIZER WORKS, 736 H. W. Hellman Building, Los Angeles.

FOR SALE—STANDARD BRED WHITE and Buff Leghorn pullets, $9.00 per dozen. White and Buff Leghorn hens, $1.00 each. One small Mann Bone Mill mounted on stand, $5.00; will exchange bone mill for White Wyandotte eggs for hatching. W. O. SHAW, P.O. Box 201, San Luis Obispo, Cal.

EAST SIDE POULTRY YARDS HAVE PURE bloods. Eggs for hatching. Hatching chicks a specialty. Barred Rocks, Buff Orpingtons. Prices right. E. J. LOOK, 16 Hancock street, E. San Jose, Cal.

SINGLE-COMB WHITE LEGHORNS. FINE white, large, birds; good layers. Hatching and shipping chicks. Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER, Ontario, Cal.

FOR SALE—BARRED ROCKS, WINNERS OF 11 prizes and Silver Cup for Best Barred Rock Male at Breeders Show, 1907. Some choice cockerels for sale. Eggs. Write your wants. Frederick Espe, 4425 So. Main St., Los Angeles, Cal.

FOR SALE—ROSE COMB WHITE LEGhorn cockerels and pullets. Eggs for hatching. VARIAN'S POULTRY YARDS, 895 N. Catalina avenue, Pasadena, California.

FOR SALE—STANDARD BRED BUFF ORpington cockerels, full grown, fine birds, price $3.00 and $4.00. C. ROTH, Clovis, Cal.

PARTRIDGE WYANDOTTES—C. ANDREWS, 332 West 3rd street. Yards, Hollywood. 11 prizes and silver cup at show 1907.

WATERMELON SEED.

CHILEAN WATERMELON SEED.—EXTRA select. No seed from culls. By mail, 4 lbs or less, 75 cents per lb; over 4 lbs, by express 60 cents per lb. S. FAIRBURN, Burbank, Cal.

FOR SALE—FINE RED CHILLEAN WATER Melon seeds. Price 50c a pound. WILLIAM BRITTON, Burbank, California.

Late Valencia Buds

I have 1000 Late Valencia year-old buds, running from ⅝ to an inch in diameter, now ready for market. Call and inspect stock or write for prices. Nursery ⅛ mile west of Irwindale, on Covina branch of S. P. R. R.

C. E. Newlan, Irwindale, Cal.
Home Phone 2117

SEEDS

If you are in need of fresh and reliable seeds, of VEGETABLE, FLOWER or FIELD, and PLANTS on which you can depend, it will be to your advantage to send for our ***New Catalogue.*** Mailed free on application. ***Sevin, Vincent & Co., 621*** Sansome Street, San Francisco, Cal.
In ordering please refer to Adt. in Cultivator

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

Lombardy Poplars.

If the subscriber from Modesto who inquired last week regarding the best tree to plant for wind breaks will plant "Lombardy poplar," he will find a most valuable addition to his farm. They make the most rapid growth and supply fuel and posts in from two to three years. I have tried several other kinds. The Lombardy poplar has proven the most satisfactory. I have over five hundred on my twenty acre farm.

All my poultry fences, corrals and fence enclosing the twenty acres are Lombardy poplars. I put in the posts any time from December to March 1. Every one makes a growth of from seven to ten feet the first year. They furnish me in wood and I will have posts and wood to sell after this year. I cut the trees for posts six feet from the ground when they are four inches in diameter, taking care to leave a few limbs on the stumps, also on the posts. Those make small trees to plant the next year. If the soil is not heavy clay, an ordinary crow bar is all that is required to make the holes for planting.—Subscriber.

Weak Pins.

Bought a couple of female shoats about six months old a few weeks ago, kept them in pen which I moved on to fresh ground every few days, and fed skimmed milk, sweet and clabbered. One of them has lost use of hind legs; can't stand on them, but drags them. Have turned her out on green feed, and have reduced her amount of milk as seemed so fat, thought that might have caused trouble. Can you give me any light on the subject, as to cause, treatment, and if there is a possibility of cure.—A. B. N., Dos Palos.

The trouble with pigs breaking down behind is common and is said to be due to lack of phosphorus in their food. The experiment station advises feeding a tablespoonful of ground bone daily as a preventive. The pigs affected may be relieved by using a stong liniment on the back. Practically I believe in using up the pig for pork at once, and in breeding away from the trouble. Any sows from litters that show this trouble are discarded as breeders.—M. E. S.

To Dry Mushrooms.

Wipe them clean, take away the brown part, and peel off the skin. Lay them on sheets of paper to dry, in a cool oven, when they will shrivel considerably.

Keep them in paper bags which hang in a dry place. When wanted for use, put them into cold gravy, bring them gradually to simmer, and it will be found that they will regain nearly their usual size.—M. Greenhalzh. Corning, California.

Cotton-Tail Rabbits.

Please tell me how to destroy the cotton-tail rabbit, the worst pest I have in my vegetable garden.—R. I. Fullerton.

We do not know of any satisfactory way to destroy cotton-tail rabbits. Probably the best plan to protect the garden is to fence it with ordinary chicken netting. The rabbits will seldom get over netting two feet high.

Indian Runner Ducks.

Will you please give me the name of party that made inquiry in the last week's Cultivator, concerning a market for Indian Runner duck eggs, only the initials were given.—Mrs. Isaac Martin, Merle, California.

Correspondent please communicate.

Every farmer's family needs a good, reliable revolver for protection against burglars and sneak thieves, a good, accurate, reliable shot-gun for field hunting, and a good single-shot rifle for killing hogs, beeves, muttons, etc. Every farmer needing a fire-arm of any kind should send to The Hopkins & Allen Arms Co., 121 Franklin St., Norwich, Conn., for free copy of their big, new "Gun Guide and Catalog" for 1907. It gives best prices on all kinds of fire-arms and tells how to pick out a shot-gun, rifle or revolver so as to get the best value for your money.

Hopkins & Allen fire-arms are superior in quality and material, and sold at lowest prices.

Burbank Crimson Winter Rhubarb

Plants and Seed for sale in any quantity. Warranted the genuine article. Orders filled promptly

A. L. Fratt, Ventura, Cal.

FOR SALE

Muir Peaches
Lovell Peaches
Elberta Peaches
Tuscan Cling
Tilton Apricots
By the Introducer

HANFORD NURSERIES
Hanford, California.
J. W. Bairstow, Prop.

NOTICE TO MY BARRED ROCK PATRONS:

On January 10th, 1907, I assigned over to H. T. McCULLOUGH, of Monrovia., Cal., all my right, title and interest in the Arrowhead Strain of Barred Plymouth Rocks. Hence, the McCULLOUGH POULTRY FARM is the only one that can supply eggs and stock direct from the original birds and from matings made, personally, by me, to produce high-brade breeding and exhibition specimens. Thanking my many fancier friends, patrons and the public for their trade, and bespeaking for my successors a continuance of their valued favors. I remain, Fraternally yours, **S. M. BUTLER.**

Best Incubator

On the Coast — best anywhere. Made right—prices right. Guaranteed. Catalogue free. Also great **Combination Brooder.** It is great—both indoors and out. When the chicks are hatched feed them the celebrated

West Coast Chick Feed

A rightly balanced ration for the little ones. Manufactured by

West Coast Stock Food Company
818 San Fernando St., Los Angeles, Cal.

Legal Queries

Answered by L. M. FALL, Esq.
204 Frost Bldg., Los Angeles, Cal.

This department is edited by a practicing lawyer, who has had years of experience at the bar. He will give accurate and reliable answers to all legal questions when they are of sufficient importance to be of practical interest to any considerable number of our readers.—Ed.

Damage by Kick.

My neighbor's horse broke into my pasture recently and kicked a colt, rendering it useless for all time. The break in the fence is on my neighbor's part of the line and I had notified him to repair it before the accident occurred. Can I recover damages?—E. B. W., Bakersfield.

Yes. The full value of the animal.

Keeping School Fire, Etc.

I am a teacher in a country district. I have to make fires, carry coal and wood (when I can get them) sweep the school house, etc. I did not agree to do this work when I hired as teacher. Can I collect for this extra labor outside my regular salary?—A. P. J., Santa Paula.

You can only collect under your contract for services rendered as a teacher. You may also be employed to do janitor work in addition, but to do janitor work voluntarily entitles you to no compensation. See the authorities and arrange for the additional services.

Water Rights.

I bought ten acres of land from a company which is selling the land conveying water rights with it. But the deed does not specify what those rights are. What is meant by ordinary water rights that go with land sales? If no shares of water are named in the deed, and the term "subject to water rights" is used, what does it mean?—J. B. A., Upland.

"Water rights" in a deed means that the owner of the land has stock in an irrigation company entitling him to a certain amount of water from that company, per month, according to the amount of stock he has in the company. When such land is conveyed this stock is presumed to go with the land, but it does not necessarily do so. The water rights may be sold separate from the land, like any other stock.

Distributing an Estate.

Please tell me how I can make provision at my death of my property to avoid the expense and delay of probate proceedings? Will a deed, or will, render public probating unnecessary?—P. V. S., Colegrove.

All wills must be probated. The only safe way to dispose of personal property is by will. A will may be changed at any time before the death of the testator. Sometimes deeds to real property are executed and placed in escrow to take effect on death of grantor, in which case title vests immediately in grantee, qualified only by life tenancy in the grantor. This is not always safe. It often results in litigation.

Judges' Salaries.

Please state what salary judges of the several courts in California receive.—Student, Pomona.

Judges of the Supreme Court receive $8000.

Judges of the Appellate Courts receive $7000.

Judges of the Superior Courts of the different counties receive different salaries, fixed by the legislature, based upon population and amount of business. Los Angeles Superior Court judges now receive $5000. This amount will probably be increased to $6000 under a bill now before the legislature.

Wife's Dower.

When a married man dies in Kansas without a will, having property there where son lives, and having property also in California where he resided at time of death; what portion of his estate in these two states does his widow get?—Martha B. J., San Diego.

If there is but one child the widow inherits the one-half of the property in each state.

Citrus Deciduous Ornamental **TREES** Vines Palms Roses

And Every One True to Name

We Are Universal Providers for Orchards and Gardens

We do not confine ourselves to fruit trees alone, but grow also an immense assortment of ornamental trees and shrubs, climbing and trailing plants, palms for house decorations and outside planting, roses in tree and bush form.

APRICOTS

Write us for prices on Blenheim, Hemskirke, Royal and Tilton Apricots. The last named is one of the best canning, drying and shipping cots on the market today. Our stock of this later variety is exceptionally fine, and our prices will be sure to appeal to you.

PEACHES NECTARINES

Among the standards on hand still in quantities, we have Elbertas and Tuscan Clings, and other leading sorts in limited supply. Also a fine stock of Stanwick Nectarines, the leading variety, on which we are prepared to make special inducements.

APPLES AND PEARS.

The leading varieties are becoming depleted fast, but we still have the following standards in stock:—Gano, Jonathan, Smith's Cider, Yellow Newton Pippin, Lawver and Spitzenburg.

In Pears: Bartlett, Beurre Hardy, and Winter Bartlett.

CHERRIES.

We are still in the position to supply Bing, Black Tartarian, and Royal Ann Cherries, and are prepared to offer special inducements in quantities.

ALMONDS.

If you want any I. X. L., Drake Seedling, Ne Plus Ultra Nonpareil Almonds, we think we can make it worth your while to place your order with us.

Calimyrna Figs

Our Great Specialty

None genuine without our seal attached to each bundle of trees

CALIMYRNA R FRESNO

GRAPEVINES

We can still furnish such leading wine grapes as Burger, Feher Zagos, Grenache, Sauvignon Vert and Trousseau, and in table and raisin varieties, Black Cornichon, Black Hamburg, Flame Tokay, Emperor, Thompson's Seedless. Also vines grafted on Phylloxera resistant roots and rooted Phylloxera resistant vines. Write for our complete surplus list.

CITRUS TREES.

If you want an assortment of varieties we can supply you with the leading kinds of Oranges, Lemons, Pomelos, Limes, Citrons, all grown in the great Thermal belt near Exeter, Tulare county.

OLIVES.

Our assortment of the leading oil and pickling varieties was never better. Our catalogue tells all about them.

BERRIES.

Mammoth and Loganberry plants. Extra fine well-rooted stock. The new Himalayan Giant Blackberry, introduced from Australia, is proving to be a great money getter in the San Joaquin Valley and the growers are enthusiastic over it. Stock limited. Price $10.00 per 100 for finely rooted tips.

ROSES.

We are still in the position to make up assortments of many of the leading and best sorts of roses. Let us send you a list of varieties still in stock.

BURBANK'S CREATIONS.

For the first time we are offering four of his latest and best creations, SANTA ROSA PLUM, RUTLAND PLUMCOT, PARADOX and ROYAL WALNUTS. Write for illustrated booklet telling all about them.

CATALOGUE AND PRICE LIST.

Our new catalogue is the finest book of its kind ever gotten out on the Pacific Coast. It is a compendium of valuable information and should be in the hands of every fruit grower and lover of the beautiful in nature. We also print a catalogue in Spanish. Catalogue and price list mailed on application.

OUR NURSERIES AND FARMS.

Roeding Place, 640 acres.
Nursery and Propagating Department Plant No. 2, 130 acres.
General Nursery, Plant No. 3, 320 acres.
Citrus Nursery and Citrus Orchards, Exeter, Tulare, county, 100 acres.

PAID-UP CAPITAL $200,000.00

Fancher Creek Nurseries

(INCORPORATED)

GEORGE C. ROEDING, President and Manager

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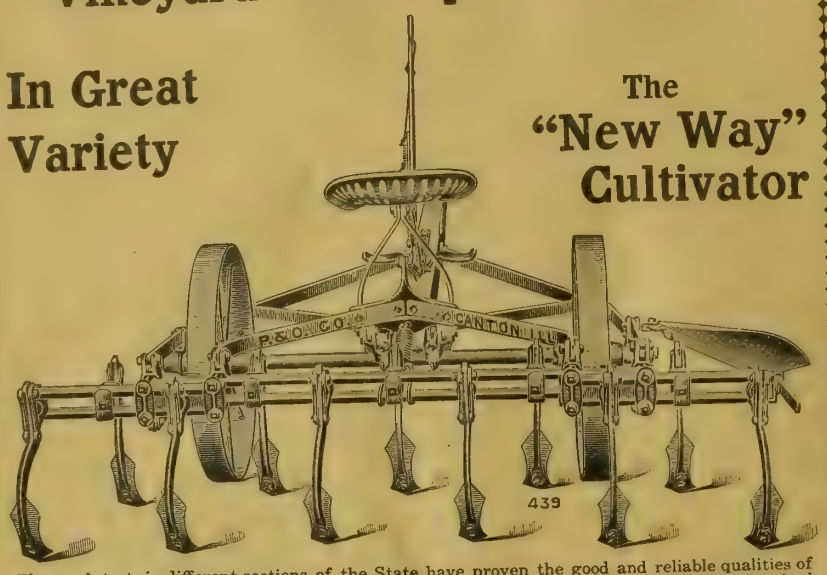
In Great Variety

The "New Way" Cultivator



Thorough tests in different sections of the State have proven the good and reliable qualities of this tool. There is great clearance space between front and rear rows of shovels. It is raised and lowered with the utmost ease and both rows of shovels are on the same level at all depths.

Write Us for Full Particulars

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General Agriculture

TO WHEAT GROWERS.

PROFESSOR G. W. SHAW of the University of California, who is in charge of the cereal investigations which are being made upon the station near Yuba City, has issued a preliminary report covering the progress made during the last two years. While the report is short it very strongly reminds the public of the great importance of improving both the quality and quantity of the present cereal crops of the state.

In his report Professor Shaw shows that could the present annual importations of over four million bushels of Eastern wheat be stopped and supply the milling trade entirely from California-grown wheat it would mean a saving to the people of the state of over $1.500,000 annually, and could the average production of California wheat be increased by even so small an amount as one bushel per acre there would be another $1,500,000 added to the agricultural resources of the state.

Two field stations of twenty acres each have been established, one at Yuba City and the other at Modesto, and a cereal laboratory equipped with the necessary appliances for complete practical, chemical, milling and baking tests has been established at the university.

As this work was begun early in 1904 it is yet too early to expect definite results, as experiments of this kind must be extended over a period of several years before all the experiments can be worked out.The experiments are being carried on under the following four plans:

First, the introduction of new varieties of wheat, oats and barley from other states and countries; second, the improvement of desirable new varieties by straight selection; third, the development of entirely new varieties by crossing high gluten wheats upon local stocks and following this by selective improvements; fourth, a line of special experiments dealing with numerous phases of cultural practice, including the advantages of change of seed, effect of fertilizer and rotation of crops on the yield per acre, effect of the time of cutting, methods of conservation of moisture in cereal culture, and numerous other factors.

Bills are now before the senate and assembly providing for an apropriation of $10,000 with which to continue these experiments for two years longer.

FARM WINDBREAKS.

The Norway spruce planted in open exposure as an ornamental evergreen has not generally given good satisfaction in the larger share of our State, the white spruce making a far more presentable appearance, holding its bright green color all the year round. For the same reason we have not felt like recommending this tree for windbreak planting, but have rather approved of the Scotch pine and other varieties that stand open exposure. However, some years ago we began planting a number of varieties of evergreens in a wood lot where the black oaks had begun to die and leave large vacant places. This planting was made irregularly with trees about two feet high without any cultivation or further care, other than to dig a hole sufficient for the roots of the tree. Of the varieties so planted we have found the Norway spruce, arbor vitae, white pine and balsam fir among the better kinds, the pines seeming to demand more light and room than such a space would give them. Of all the trees so planted the Norway spruce has held its own and made the best growth of any, many of them appearing almost as thrifty as if they had been under cultivation and held the ground alone, and give promise of making good timber in a shorter period than any other of the kinds planted. What little experience we have had with the Douglas spruce, it has also done well, and we are under the impression that this will prove a very valuable species in grove planting or reforesting.—N. D. Farmer.

CORN AND ALCOHOL.

E. W. Wagar has issued a pamphlet in which he takes the ground that denatured alcholol will force the price of corn up to $2 per bushel and corn land to $5000 per acre. This enthusiast says further:

"Corn is the greatest, readiest and the best producer of alcohol in the world. Alcohol is the best and cheapest available source of light, heat and motive power in the world. Light heat and motive power are the three agents closest allied to the civilization, development and advancement of the industrial world and the comfortable existence of mankind. Those who consider this funny will laugh; those who think it not true should sell the corn crop of 1906 short; but the farmer who disposes of nis corn below 40 cents at home is throwing away money."

AN EXTRAORDINARY SUCCESS.

A Scottish minister, taking his walk early in the morning, found one of his parishoners recumbent in a ditch.

"Where have you been the night, Andrew?" asked the minister.

"Weel, I dinna richtly ken," answered the prostrate one, "whether it was a wedding or a funeral, but whichever it was it was a most extraordinary success."

Tubb—I flatter myself that honesty is printed on my face. Grubb—Well—er—yes, perhaps—with some allowance for typrographical errors.

CORN CORN CORN CORN

Plant Eastern-Grown Seed Corn

Johnson & Musser Seed Co.

Up-to-Date Seed House

Iowa Silver Mine, Grown on the Rosemead Ranch by James Gooch from our Eastern-grown Seed.

We have just received our usual carload of Nebraska-grown hand-picked Seed Corn, and offer it at the following prices f.o.b. Los Angeles:

King of the Earliest, 85 days. The earliest Dent variety. Ears short, 12 to 16 rows, well filled. Grain long and yellow, making an extra quality meal. Per lb. 5c; 100 lbs. $3.50.

Improved Leaming, 90 Days. Ears are large and handsome, with deep, large grains; orange-yellow color and red cob. Per lb. 5c; 100 lbs. $3.50.

Pride of the North, 90 Days. One of the best sorts; ears have from 14 to 16 rows 8 to 10 inches in length, slightly tapering; color light orange. Per lb. 5c; 100 lbs. $3.50.

Minnesota King, 100 Days. A large-grained variety; yellow. Per lb. 5c; 100 lbs. $3.50.

Wisconsin White Dent, 90 Days. A perfect white Dent corn, of good quality, resembling the Leaming. Per lb. 5c; 100 lbs. $3.50.

Champion White Pearl, 90 Days. A fine white flint corn. Per. lb. 5c; 100 lbs. $3.50.

Early Mastedon. Having grown and sold the Early Mastedon corn four years, we recommend it as being decidedly the best of all Yellow Dent varieties. Every one who has seen it grow is enthusiastic in its praise. Large ears, deep grains, and as many as 24 rows on a cob. Eastern grown, per 100 lbs.$3.50.

The Iowa Silver Mine. A large White Dent. The grains are as large as the Hickory King, but longer, having a small cob. It is the most desirable of all White Dent varieties. Per 100 lbs. $3.50.

Red Cob, Ensilage. A large stalk with a profusion of leaves which makes it the most desirable for ensilage. Price, per 100 lbs. $3.50.

Stanford White Flint. An excellent White Flint corn. More prolific than the King Philip. It is an excellent extra early table corn. It has long ears and a small cob. Price, per lb. 5c; per 100 lbs. $3.50.

White Cap Yellow Dent. Exceedingly prolific and hardy, resisting drought much better than other varieties. Per 100 lbs. $3.50.

Reid's Yellow Dent. This is the variety that has been brought to a high state of perfection by the Illinois growers, and drew the medal at St. Louis because it averaged the greater number of pounds per bushel. Price, per 100 lbs. $3.50.

Kink Philip, 90 Days. A small yellow variety, very popular in this market. Price on application.

Hickory King, 110 Days. A white variety, having the largest grain with the smallest cob ever introduced in a white corn. Price on application.

Johnson & Musser Seed Co. 115 N. Main St., Los Angeles

ONLY RICH SOIL PAYS.

Your request reaches me two thousand miles from my Wisconsin home, at Pasadena, California. While conditions here are in many respects quite different from those in the Middle West, I find the effects of soil robbery as fairly apparent as in the older parts of this country. It seems to me that if the history of the agricultural invasion of this continent is written by some writer of the future, it will be described as the army of devastation which robbed the soil of its fertility, beginning on the shores of the Atlantic, marching on until stopped by the great Pacific, and then, like Napoleon, crying for more land to conquer.

Now, a people that have learned that land has a value and that there is no free land left for the despoilers, have been working to bring back this impoverished soil to a higher state of production.

In very many parts of the country where stock-growing is followed by a system of crop rotation the problem of soil improvement has been solved, but in many localities where the varieties of crops are limited and where truck and fruit crops are grown some other method of soil improvement must be followed.

The physical condition of the soil first needs attention, for there is usually a deficiency of humus, and this must be provided if we expect to grow profitable crops. Stable manures and cover crops provide for this most necessary element. Leguminous plants should be grown when posible for this purpose, so as to catch and hold the free nitrogen from the air, the most expensive and most needed element of fertility.

As the area used for fruit and truck growing increases, the demand for some form of a purchased fertility increases and a larger proportion of commercial fertilizer is used each succeeding year.

Sucessful growers of truck and fruit crops use an increased amount per acre each year, as they have learned that only the best fertilized acres pay a profit. We find this is particularly true in this land of sunshine, fruits and flowers. The men who are making money are the ones who are using fertilizers freely and to the extent that seems to some most prodigal.

Each year a larger number of farmers are obliged to depend upon the commercial fertilizers in growing their crops, and they should learn more about the quality of the goods they buy.

Too many simply know they are buying a "complete fertilizer" or a "super-phosphate" and do not know that these terms mean a matter of proportion rather than the amount of plant food.

The analysis formula printed on each sack instead of giving information, really mystifies the average buyer. The value of the solubles and the insolubles, or the available and the unavailable, are often misunderstood.

There is a large amount of refuse material used for a filler by our fertilizer manufacturers that should be burned to make steam rather than used to enrich the railroad companies and the manufacturers of gunny sacks.

The time has come when the successful cultivator of the soil must know what elements of plant food he needs for the growing of his crops, just as the successful dairyman has learned what elements and what proportions of food he needs to produce the best results.

Phosphoric acid may be purchased in the form of ground rock or bone; potash in the form of muriate or sulphate and applied separately or mixed.

Nitrogen in the form of nitrate of soda should be applied alone and in several applications during the growing season. Wonderful results are often secured in using this soluble element of fertility early in the season to give the young plants a start before the weather has become warm enough to form nitrates from the nitrogen in the soil.

By using these forms of fertilizers, the farmer will be able to experiment with different combinations and learn what he needs to grow his crops to the best advantage and economically.—D. Utter.

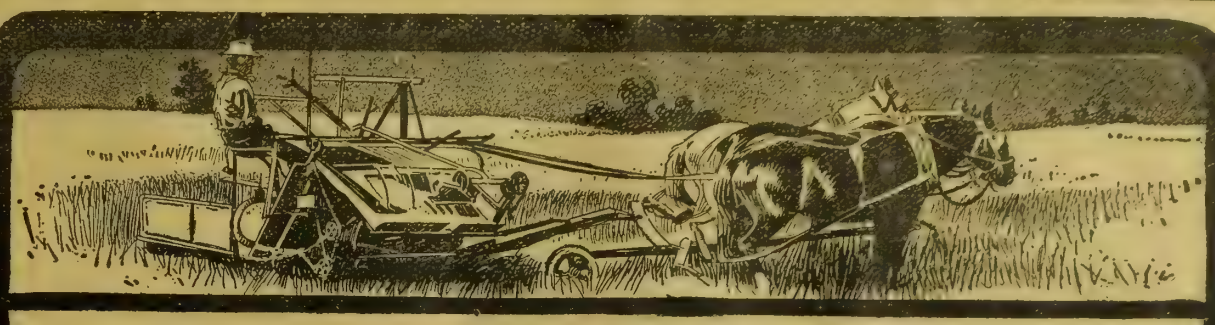
ALCOHOL MOTORS.

Alcohol is increasing in popularity as a motive power in Europe, particularly in Germany, where it is being widely used on the farm. It is convenient, safe and clean. It is reported that raw alcohol can be produced in Germany from potatoes for thirteen cents a gallon by processes so simple that the farmer can do it himself. Alcohol motors have been perfected and machinery for distilling improved, and the German government has encouraged the industry by removing the taxes from such alcohol as is used for technical purposes. —Country Life in America.

PURE WATER.

"The Pioner dreamed of the clear, cool spring gurgling from moss-grown rocks in the depths of the dell; the picturesque well sweep or creaking windlass, and the 'moss-covered bucket that hung in the well;' but both dreams have faded; for the spring is dried up, and in the well lurks a poison sweeter than poppies, deadlier than the nightshade.—McGee.

"What is the greatest danger encountered in running an automobile?" And without hestitation the chauffeur answered, "The police."



HARVEST IS COMING AGAIN ARE YOU READY?

To be sure, it's some time yet before the grain will be ready, but it won't be long before you'll be so busy with Spring work that you will have no time to get ready for harvest.

Now is the time to give this important matter serious consideration.

How did you get along last year?
Were there any delays or any break-downs?
Did you lose any grain?

Were you able to begin harvesting when your grain was just ready, and finish before it got too ripe?

How did your horses stand the work?

Think back now, and you can easily tell about how you are fixed for this year. If you are not prepared to harvest your grain quickly and easily, without danger of delay, it is time right now to take steps to prepare yourself. Now is when you have time to give the selection ot a machine the consideration you ought to give it.

When you buy a new harvesting or haying machine, you want to buy the right one. If you wait until Spring work is upon you, this important matter will be put off until the very last week before harvest, and you will have no time to investigate—no time to consider. You may even be forced to buy what you don't want. It is the part of wisdom to do this investigating now.

You know the International Harvester lines—

Champion, McCormick, Osborne, Deering, Milwaukee, Plano—

with any one of these you can do your harvesting right.

Four things are prominent in good farm machines of any kind: The principle is right; The materials are right; The workmanship is right; The record is right.

Now let us look into these things in connection with the International lines of harvesting and haying machines.

Since the invention of the self-binder, a great many different makes have been put on the market. Most of these failed to receive the approval of the American farmer. They were not built along right lines. Years ago the Champion, Deering, McCormick, Milwaukee, Osborne and Plano began to stand out from other harvesting machines, because of the correct principle back of them.

Time and experience have demonstrated that they were right; they embody all that is good that has been developed in 30 years, and there's no feature about them that is in any way untried.

So you are safe enough as to the underlying mechanical principle of any of these machines.

Now as to materials. The farmer buying an International machine may be sure that the material is **always the best.** Every bit of material—wood, steel, iron, malleables, paint, etc., is subject to the most rigid test and experiment before being used. Only large capital and a strong organization make these things possible, for in addition to the superior out-put of their own coal and iron mines, iron and steel mills, timber lands and saw mills, they give at all times a first choice from all the other material manufacturers of the entire country. The International Harvester Company affords a known market to every material manufacturer in the land if his product comes up to the high International standard. These are but a few of the many advantages which insure to the farmer the best of quality in every International machine he buys.

Next comes workmanship. The enormous demand for these six leading makes of harvesting machines enables the International Harvester Company to maintain manufacturing plants of the highest efficiency and to employ workmen of the highest skill—factories and workmen that could not possibly be maintained to supply the small demand that would come to an individual manufacturer.

Now comes the record. Practically every farmer in the United States knows of the satisfactory record of these machines. He knows that for the harvesting of all varieties of grain, light, heavy, standing, down or tangled, these machines have never faltered—have never left him in the lurch. He knows that they have stood up to the work well and have endured season after season.

He has gone to the harvest always with the perfect assurance of success. When in rare cases the unavoidable accident has occurred, he remembers that the repair parts are near at hand and that **they always fit.** Another advantage in purchasing International machines is that repair parts may be had at any time and any where.

Any one of these machines will do your harvesting right. Visit an International dealer and get whichever catalogue you want. If you don't know an International dealer, write to nearest branch house.

WESTERN GENERAL AGENCIES: Denver, Colo., Portland, Ore., Salt Lake City, Utah, Helena, Mont., Spokane, Wash., San Francisco, Cal.

INTERNATIONAL HARVESTER COMPANY OF AMERICA, CHICAGO, ILL.
(INCORPORATED)

International Line:—Binders, Reapers, Headers, Header Binders, Corn Binders, Corn Shockers, Corn Pickers, Huskers and Shredders, Corn Shellers, Mowers, Hay Tedders, Hay Rakes, Sweep Rakes, Hay Loaders, Hay Stackers, Hay Balers, Feed Grinders, Knife Grinders, Cream Separators, Gasoline, Engines, Pumping Jacks, Manure Spreaders, Weber Wagons, Columbus Wagons, Bettendorf Wagons and Binder Twine.

Orange Orchards

3 Years Old, Will Pay Big Profits

Located in the Best Citrus Fruit Belt in California

$125.00 Cash per Acre

Balance in 3 Years

to secure a 10-acre orchard that will pay later on from $800.00 to $1000.00 net profit per year per acre.

Let us tell you how this can be done.

Absolute Security

for your investment and for large profits, is GUARANTEED in this the BEST ORANGE ORCHARD PROPOSITION ever offered. Your profits GUARANTEED by BOND and MORTGAGE on OTHER ORCHARDS of our own.

Only 200 acres will be sold in this way to advertise the tract of 3000 acres we are selling.

Frostless location, ABUNDANCE of cheap water, BEST CLIMATE AND SOIL in the whole State FOR ORANGES AND LEMONS.

Orchards 10 to 20 years old and clearing up to

$1,500 per Acre per Year

in this locality are proof positive of the value of our proposition.

Such an Opportunity

only comes once in a lifetime. Write or call NOW and let us

Show You.

We have the best proposition in the world for good, successful, responsible agents, who can SELL REAL ESTATE either on large salary or commission, or both, and we want the best representative obtainable in every city.

THIS MAY BE YOUR CHANCE.

It costs very little to write or interview us and LEARN of this UNPRECEDENTED chance to PROVIDE an EXCELLENT INCOME for the FUTURE, with COMPARATIVELY NO INVESTMENT of cash, and LITTLE TIME OR ATTENTION REQUIRED.

Lindcove Realty Co.

402 Pacific Electric Building, Los Angeles, Cal.
Home Phone F4824

The Produce Markets

Los Angeles Markets

LOS ANGELES, Mar. 6, 1907.

The receipts of butter yesterday were unusually heavy, amounting to 37,369 pounds. This is far above the amount needed to meet consumption and the increased supply eased the market decidedly. However, a change in the selling price is hardly looked for within the next two or three days as the rain will again curtail shipments from the north for a short time. Eventually the supply will be greatly increased as result of this rain, but a difference will not be noticeable until the weather again clears up.

Valley Creamery	67½
Coast, fy,	60
Cooking	23

Cheese

Cal. Young American, per lb	20
California Anchor	19
Cal 3-lb. hand	21
Northern	17
Domestic Swiss	20
Imported Swiss	29

Eggs and Poultry

The price of eggs went up one cent today, making official quotations of local ranch candled stock 20 cents and northern 19 cents. The advance is unusual at this time of year, but in the last two days few eggs have arrived owing to the heavy rain.

The supply of eggs is no heavier than it was at this time last year and demand has increased perceptibly which accounts for prices not declining more rapidly than they have.

Eggs, local, per doz.	20
Northern Candled	19
Fresh Eastern	18

The following are average prices which dealers pay to producers for live weight:

Hens, per lb	14
Young Roosters, per lb	16
Fryers	16
Broilers, per lb	18
Old Roosters	8
Turkeys	16@19
Geese	12
Ducks	12

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lb	7.50
Prime Steers.	5.50
Heifers	4½
Calves, per lb	5
Sheep, ewes, per head	5.25
Lambs, per head	7.50
Wethers	5.50

Potatoes

Receipts of potatoes were heavier than on the day previous, but the increases was not sufficient to frighten dealers and the market was slightly improved. No spuds were sold during the call on the Los Angeles Produce Exchange, but the only offerings made were at a higher figure, an indication that the surplus of last week has about cleaned up.

Salinas	2.50
Burbank, Local	2.25
Highland	2.25
Sweets. Yellow, per sack	3.75@4.00
Colorado	1.75
Minnesota	1.85

Vegetables

Owing to the bad roads and the inability of growers to pick during the rain yesterday, green vegetables were scarce today and prices on several varieties advanced. All bunch goods sold up to 50 cents straight. Only Cuba and Mexican tomatoes on hand.

Asparagus, lb.	15
Beets, per doz	40@60
Bell Peppers, Green, lb	5
Cabbage, sack	75
Chili Peppers, Green	6@7
Chili, Dried, per lb	25
Cucumbers, per doz	1.50@1.75
Cauliflower, per doz	90@1.00
Carrots, per doz	40@60
Celery, per doz.	40
Egg Plant, per lb	15
Garlic per lb	6
Green Onions, doz. bunches	25@30
Lettuce, per crate	50@1.00
Lima Beans, per lb	7@8
Onions, Aust. Brown, sk	135@1.50
Onions Y. Danvers	1.35@1.50
Parsnips, per doz	35@50
Rhubarb, per doz.	3@4
Radishes, per doz	15@20
String Beans, per lb	8@12
Sugar Peas, per lb.	3@4
Turnips, doz bunches	40@60
Tomatoes, per box	75@1.25
Wax Beans, per lb	16@18

Citrus Fruits

Lemons	2.00
Valencias	1.50@2.00
Navels	1.25@1.50
Grapefruit Seedless	2.00@2.50
Grapefruit seedlinggs	1.25@1.50

Fresh Fruits

Strawberries were out of the market this morning and in all probability will be until the weather clears up. Oranges were less plentiful and demand was lacking.

Apples, Bellefluer, per box	1.35@1.50
Apples, Ben Davis	1.35@1.40

Dried Fruits

Evap. Apples, fancy, per lb	9
Apricots	18
Peaches	15
Pears	12@13
Prunes, fy,	5@8

Beans, Dried

Limas, No. 1, per cwt	5.00
Pink No. 1	2.65@2.75
Lady Washington	2.90@3.00
Small White	3.25@3.40
Black Eyes	4.50@5.00
Garvanzas	4.25@4.50

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb. cans, lb.	7½@8
Extracted, white	7½
Light Amber	7
Comb, water white, 1-lb fms	16
Light Amber	14
Beeswax	25

Nuts

Almonds, new, per lb	19@20
Peanuts, Virginia	7
Peanuts, California	6½
Walnuts, No. 1, S. S.	14@15

Hay

Barley, No 1	15.50@16.00
Barley, No 2	11.00@12.00
Alfalfa, Local, per ton	14.00@16.00
Plain Oat Hay, No. 1	18.00@20.00
Plain Oat Hay No. 2.	9.00@15.00
Wheat No. 1	14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, No. 1, per cwt.	1.40
Barley (to producer)	1.00@1.05
Rolled Barley	1.30
Corn, per cwt.	1.40
Cracked Corn	1.45
Feed Corn Meal	1.45
Shorts	1.45
Bran	1.30
Oil Cake Meal	2.75
Cocoanut Meal	1.50

San Francisco Markets

SAN FRANCISCO, March 5, 1907.

Butter.

There were no changes whatever in the market for Dairy Products yesterday, Saturday's prices still ruling on Butter and steady on both Eggs and Cheese.

Receipts yesterday aggregated 41,000 pounds of Butter, 14,500 pounds of Cheese and 1904 cases of Eggs.

California, ex. per lb	29½
California, firsts	28½
California seconds	27½
Packing Stock	23

Cheese

New California, fancy	15
Cal. Young American, fancy	16

Now is the time to go for gophers with Bille's Gopher Poison. The gophers go for it and it will go for them good and plenty every time.

This is a photo of 201 killed in one day on a ten acre field before they could get back to their holes, with one bottle of

BILLE'S GOPHER POISON

Endorsed by Agricultural Colleges and Experiment Stations. Not one of the ordinary poisons, but in a class by itself. Has had greatest success in the Middle West. The secret being that it is most attractive to gophers, squirrels, etc., and sure death to them. It gives the grain a glossy coating, retaining the poison for weeks. Hundreds also die in their holes by eating it there. We have bought the patent rights for this section and are selling at the eastern price of $1.25 for large bottle. The ingredients cannot be bought at a drug store for that price. Money refunded if not as represented—so printed on the bottle. If your dealer does not keep it send $2.50 for two bottles, express prepaid by us. Anyway send for circular with affidavit of above killing, and a few out of many testimonials.

We do not send less than 2 bottles.

Compounded under Bille's patent by

West Coast Stock Food Co.

818 San Fernando St. Through to Alameda St. Los Angeles, Cal.

Manufacturers of the celebrated West Coast Poultry Foods.

Send us the names of twelve persons who keep poultry and we will send you free "The Poultry Manual," by those high authorities, F. L. Sewell and Ida E. Tilson, profusely illustrated.

Eggs and Poultry

The demand for Poultry was decidedly small yesterday and fluctuations in prices showed few changes.

Fresh Ranch Eggs	19
Eggs, first, per dozen	18
Hens, per doz., small	5.00@5.50
Hens, large	600@7.50
Young Roosters, large	7.00@8.00
Young Roosters, small	4.50@5.50
Old Roosters, per doz	4.00@5.00
Fryers, per doz	6.50@7.50
Broilers, per doz	4.00@6.50
Ducks, young	6.00@8.00
Geese; per pair	2.00@3.00
Turkeys, per lb	16@19

Live Stock

Steers. No. 1	9@9½
No. 1 Cows and Heifers	6½@7
Hogs, 80 to 130 lbs	8@8½
Hogs, 250 to 350 lbs.	8
Calves, per lb	5@5½
Lambs, yearlings	6½@8

Potatoes

Oregon Burbank	1.45@1.75
Salinas Burbanks, ctl	1.50@2.00
Rivers	1.60@1.80
Sweet Potatoes. ctl	2.75@3.00

Vegetables

Asparagus	5@12
Cucumbers, per doz.	1.00@1.25
Chili Peppers, Green lb	15@25
Egg plant per box	3.00@3.50
Green Peas, per lb	6@12
Squash, crates.	65@90
Onions, Red, per sack	75@1.00
Onions, Yellow	75@1.00
Peppers, Green, Bell	40@75
Rhubarb, per box	1@1.75
Summer Squash, large crate	2.00
String beans	15@17
Tomatoes, Mexican	1.75@2.50
Wax Beans	15@17

Citrus Fruits

Lemons	75@2.50
Navels	1.00@2.00
Seedlings	1.50
Grapefruit, seedlings	1.00@1.50
Grapefruit, seedless	2.00@3.00
Limes	3.50@4.00

Fresh Fruits

Apples, fancy, per box	1.50@2.50
Apples, common, per box	75@1.00
Pears, Winter Nelis	1.75@2.00
Prunes, per box	60@85

Dried Fruits

Apples (evap.)	7@8
Apricots, per lb	16@20
Figs, white	2½@4
Muscatels (loose)	7@8
Prunes	2@2½
Peaches	10@12½
Raisins, seeded (1906)	8½@10
Thompson, unbleached	7½
Thompson, bleached	9@11

Beans and Seeds

The bean market is expected to show some improvement this week, but whether dealers' anticipations are realized seems more doubtful now than some days ago. Supplies continue liberal, especially on Whites.

Limas, No. 1	4.10@4.15
Pink	2.10@2.25
Large White	2.00@2.35
Small White	2.80@2.95
Black Eyes	4.50@4.65
Red Kidneys	3.40@3.75
Bayo	2.30@2.50

Hops

Desirable grades of California, 1906 crop, future delivery, 10@12 cents per lb, with occasional sales at 12½ cents.

1906 Crop (future lb.)	10@12½

Nuts

Almonds new	17½
Peanuts, Viginia	6½
Peanuts, California	5½@6
Walnuts	15@16

Honey

Clear White Comb	16½
Amber	14@15
Extracted	5½@7

Hay

All descriptions of Feedstuffs are meeting with a good demand and prices are well sustained.

Alfalfa, local	10.00@13.00
Oat	15.00@18.00
Wheat No. 1	17.00@19.00
Wheat, No. 2	13.00@16.00

Grain

Wheat No. 1	1.27@1.30
Barley No. 1	1.12@1.13
Corn, small yellow	1.50@1.55
Corn, yellow	1.27@1.30
Oats, White	1.42@1.60
Oats, Red	1.30@1.75
Ground Barley, per ton	24.00@25.00
Bran per ton	21.50@22.50
Straw, per bale	45@75
Feed Corn Meal, per ton	31.00
Cracked Corn per ton	32.00
Oil Cake Meal, per ton	38.00
Cocoanut Cake, per ton	27.00
Calalfa Meal, per ton	21.00
Mealfalfa, per ton	21.00

Citrus Market

During the past week the eastern citrus markets have yielded prices very satisfactory to the California shippers. All conditions have been favorable and consequently the market is very strong and yesterday's sales in New York, as given below, show prices slightly higher than for some time. The New York weather today (March 5) is extremely good—a little cloudy—but warm—good for citrus sales. Fifteen cars of oranges were sold today.

NAVELS—	AV.
Signet ex fy O G C A	$3.00
Colonel ex ch O G C A	2.75
Trade Mark, T. I. O G C A	2.55
Colonel ex ch O G C A	2.60
Blue Flag ex fy Spence Ft Co	2.25
Mocker o r Spence Fruit Co	2.05
Blue Globe ex fy Riv. Ft Ex	2.75
Red Glode ex ch Riv Ft Ex	2.70
Riverside st Riverside Ft Ex	2.30
Sweetheart ex ch Riverside Ft Ex	2.80
Eagle ex ch Riverside Ft Ex	2.40
La Mesa, ex fy Riverside Ft Ex	2.85
Quail ex ch O K Ft Ex	2.10
Rebecca ex ch R H Ft Ex	2.35
Brook	2.20
Parrot ex ch S A Ft Ex	2.00
Hawk ch S A Ft Ex	1.75
Signel ex fy Stewart Ft Co	2.60
Warrior ex ch Stewart Ft Co	2.45
Flower fy Upland Dist.	2.15
Flower ch Upland Dist	1.90
Gypsy Queen ex fy M & G	2.70
Gypsy Queen ch M & G	2.55
Tropical Queen M & G	2.35
Lion Head T. I . M & G	3.05
Tiger Head T. I. M & G	2.75
Lion Head ex fy M & G	2.75
Tiger Head ex fy M & G	2.25
Old Mission fy C C Chapman	2.45
Old Mission ch C C Chapman	2.30
Golden Eagle, st, C C Chapman	2.25
Laverne Beauty M L Sparks	2.55
Laverne Grove M L Sparks	2.40
Orchard o r National Orange Co	3.05
Standard st National Orange Co	2.75
GRAPEFRUIT HALVES—	AV.
Signet ex fy O G C A	1.80
BLOOD HALVES—	AV.
Sweetheart ex fy Riverside Ex	1.40
TANGERINE HALVES —	AV.
Orchard o r National Orange Co	2.35
Bear ex fy O K Ft Ex	1.85
Quail ex ch O K Ft Ex	1.30
Blue Globe O K Ft Ex	1.95
Lion Head ex ch I L Lyon & Son	1.90

The following appeared lately in the agony column of a daily paper: "Dear Tom—Come immediately if you see this. If not, come on Saturday."

When writing advertisers mention Cultivator

GROWING SORGHUM.

Method of Planting.

Last year I irrigated two and one-half acres about the second week in June, then as soon as dry enough I plowed and harrowed the ground until it was in good condition. I took an ordinary disc wheat drill, regulated so it would sow about forty pounds per acre letting each drill sow. That was all I did to it until time to harvest it, cutting it when the seed was just beginning to harden, putting it up to use as hay the middle of September.

Method of Harvesting.

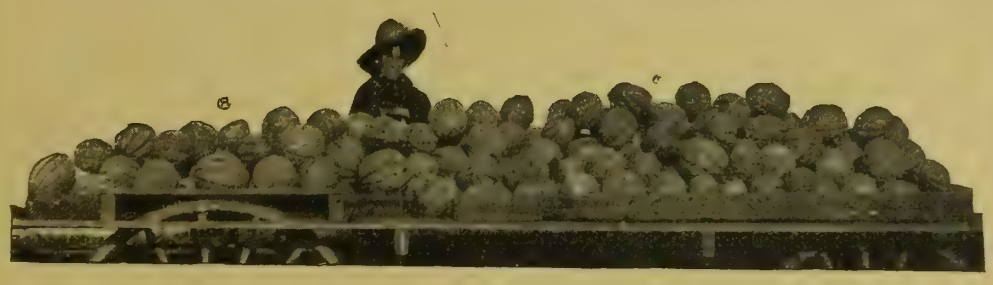
At time of cutting it had grown to be 8 or 10 feet in height. I cut it with an ordinary mowing machine, in a day when there was quite a strong wind, cutting towards the wind, and only cutting one way. So it fell back clear of the sickle.—E. B. Robinson, Hanford, California.

The New Melon

HAS BEEN NAMED THE

J. & M. Christmas Melon

By Charles Richardson, of San Gabriel, Cal., who was awarded the $5.00 offered by Johnson & Musser Seed Co. for the best name for the New Melon. **Price—Per oz., $2; per pkt., 50c.** Sold only by Johnson & Musser Seed Co.



The Most Popular Musk Melon on the Los Angeles Market. For Two Years

Gautier's Pineapple Musk Melon

Has eclipsed all other varieties to such an extent that ninety per cent of all the musk melons grown for the Los Angeles market are of this variety. **Price per lb., $1.00.** Sold only by Johnson & Musser Seed Co.

Oregon Evergreen Sweet Corn

Last year was the first season this excellent sweet corn was grown extensively for the market, with the result that the newspapers commented upon the unusual excellence of the sweet corn offered by the peddlars. No market gardener will now grow any other variety because Oregon Evergreen Sweet Corn will yield nearly double the crop of any other variety, is less liable to the ravages of the worm and, once having tasted this, the consumer will have no other. **Price—Per lb., 15c; per 100 lbs., $8.00.** Sold only by Johnson & Musser Seed Co.

Eastern Grown Field Corn

We have just received our usual carload of seed corn from Nebraska. It is extra selected and hand-picked. Send for samples of the varieties you wish to plant. Why plant common seed when 25c worth of our extra selected hand-picked Eastern corn will plant one acre. **Price—Per lb., 5c; per 100 lbs., $3.50.** When ordering corn seed to be sent by mail, add ten cents per pound for postage.

Anaheim Chili

Nearly ten inches long

In this chili Southern California should feel a personal pride. It is of local origin, and as we are always on the lookout for the best of everything we discovered this excellent pepper, already popular in the Anaheim section, but little known elsewhere. We now buy the peppers and take the seed from them, so we are enabled to positively guarantee our seed true to name and the best of its kind. **Price—Per kpt., 5c; oz., 25c; per lb., $2.50.** Sold only by Johnson & Musser Seed Co.

The Up-To-Date Seed House

Johnson & Musser Seed Co.

113 No. Main St., Los Angeles, Cal.

Richest Farm Lands
In California

Are those found in Kings and Tulare Counties, where sugar beets, alfalfa and fruit return immense profits.

Dairying

proves highly remunerative and stock raising is better than banking. These lands are selling for $25 to $30 per acre. Profits follow improvements. Over $1,500,000 invested on lands owned, sold and developed by this Company.

Corcoran

The center of this tract of wealth, is a magic town, provided with every advantage of railroads, water and electric lights, and is a marvel for its age.

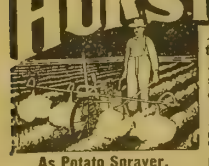
Security Land and Loan Co.

357 South Spring St. Los Angeles, Cal.

Control These Lands.

Excursion Every Tuesday Night

HURST POTATO & ORCHARD SPRAYER on FREE TRIAL



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From a practical standpoint hens are simply egg machines. They take the feed, convert it, and lay the eggs. But like every other kind of machine, to do the most work, the hen *must* be in perfect order. The digestive apparatus is the important factor in egg production. Many poultrymen feed an abundance of good albuminous food such as should produce a profitable egg yield, but if the digestion is impaired and the egg-organs dormant, no amount of food will produce the desired results. But give the fowls a tonic to increase the digestion, a little iron for the blood, and regulate the system generally, toning up the egg-organs and **you are certain to get eggs even in the coldest weather.**

DR. HESS Poultry PAN-A-CE-A

the prescription of Dr. Hess (M. D., D.V. S.), contains all these principles to increase egg production and cure cholera, roup, indigestion, etc. It has the indorsement of leading poultry associations of the United States and Canada, costs but a penny a day for about 30 fowls and is **sold on a written guarantee.**

1½ lb. package, 35 cents; 5 lbs. 85 cents; 12 lbs. $1.75; 25-lb. pail $3.50.

Send 2 cents for Dr. Hess 48-page Poultry Book, **free.**

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Record Prize Winners
130 Firsts at Four Shows.

Record Layers
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Arthur Letts, Prop. **Will Purdy,** Manager

Household Department

DEATH OF LOVE.

Yet each man kills the thing he loves,
By each let this be heard:
Some do it with a bitter look,
Some with a flattering word;
The coward does it with a kiss,
The brave man with a sword!

Some kill their love when they are young,
And some when they are old;
Some strangle with the hands of Lust,
Some with the hands of Gold.

Some love too little, some too long,
Some sell, and others buy;
Some do the deed with many tears.
And some without a sigh;
But each man kills the thing he loves—
Or love would never die.

—Balad of Reading Gaol.

STORY IN FOUR LETTERS.

COLLEGE student sits in his room smoking and writing letters.

First letter, Percy Walker to his uncle, Samuel Walker:

"My Dear Uncle—I write this my fortnightly letter to you to tell you that I am still doing very well in my classes—studying hard, devoting my whole time to my college duties. I haven't missed a lecture so far this term. You know, I am very fond of athletics, but remembering your advice to be careful about letting sports interfere with my studies I have hung up the racket and the golf stick, contenting myself with poring over books. It is very hard now that the spring days are on to see the fellows going out in field costume for practice; but remembering your valued advice, I resist the temptation.

"Then, too, I have taken advantage of your warnings about drinking and smoking. Cold water is good enough for me, and as for smoking, the smell of tobacco makes me sick.

"I hope you and my aunt continue in your usual good health and that your eyesight has improved. Tell Aunt Caroline that I am taking all the spring medicines she sent me. I am really quite fond of the herb tea, and the liver mixture is doing wonders for me. Tell her that I am heeding her advice not to throw off my overcoat too early in the spring and not to go out on damp ground without my rubbers. The muffler she so kindly sent me at Christmas time I have worn constantly all winter.

"Be assured, my dear uncle, of my affection for you and my aunt and believe me your devoted nephew,

"Percy."

Second letter, Percy Walker to his fiancee Miss Ruth Stevens:

"Dearest Ruth—Have just written uncle, and now comes the delight of writing to you. (Stop till I light a pipe.) I have to tell you the glorious news that I am first in winter practice in tennis and have won a place in the university crew. I've had more time for sports this term because I've chosen elective studies that don't interfere—the lectures, I mean—with the hours for practice. I am having a hard time in the spring examinations and for the last week have been 'boning' night and day. I hope to slip through—if my ponies don't go back on me—but regret that the confinement and lack of exercise may 'throw me' in my candidacy for a place in the football team.

"By the bye, I was forgetting to tell you that I gave 'a wine' in my room last week, at which two baskets of champagne were consumed. There were twelve of us, each man drinking two bottles. The gang was too high mucky-muck for pipes, so I had to buy a box of cigars. This took my last dollar, and uncle's next check isn't due for two weeks. I wish I dared ask the old rooster for an extra. He'd send it quick enough, but it would give me away. I'm telling him I have only term and hash bills to pay, and he knows my allowance is plenty for that.

"Mind, sweetheart, when you see uncle to tell him that I've taken a prize. It's for singles in tennis, but he'll think it's for a thesis in Greek. And tell Aunt Caroline that I've been invited to take the superintendency of the Sunday school at the Third Presbyterian church. They'll consider me too modest to write them these things and will think all the more of them coming from you. Goodby, lovey. With a billion kisses, your loving.

"Percy."

Enter a gang of students to discuss the makeup of the baseball team for the coming season. When they leave the letter writer is about to leave, when, seeing his letters, he puts them in envelopes and hurriedly addresses them. Then he runs after the athletes.

Third letter, Miss Ruth Stevens to Percy Walker.

"Dearest Percy—You naughty boy! You have sent me by mistake a letter to your uncle. (Great Scott, I must have sent her letter to uncle!) Oh, how I laughed when I read it! (For heaven's sake, it's no laughing matter!) You ought to be ashamed of yourself. You devoting your whole time to your studies! 'Cold water good enough for you!' 'The smell of tobacco makes you sick!' Then those 'spring medicines' your aunt sent you. You know you never wear an overcoat or rubbers and seldom a hat.

"I think you'd better go back to school and learn to write. It was all I could do to read your letter. You must be more careful. Some day you'll be sending one of your letters to me to your uncle."

Soliloquy: That's just what I have done. Ruin stares me in the face. Uncle will stop the funds, and I'll have to leave college. And that when I've just got where I wanted to get on the teams. Well goodby, alma mater. I go to some sweatshop or other, where I'll have to come down to fingering other people's filthy lucre.

Fourth letter, Samuel Walker to his nephew:

"Dear Percy—Yours of the —th inst. received. Your handwriting is so bad that I can't read it. I suppose it is a request for money, so I inclose a check for $100. Your affectionate Uncle.

"P. S.—Don't go out of your room if you can help it on these damp spring mornings. There is a great deal of pneumonia about."

Soliloquy: By thunder! What an escape!—Howard B. Turner.

Magistrate (severly)—Do you know the nature of an oath, boy?

Boy—Know the nature of an oath, your lordship?—and me your lordship's caddie!

"Ya-as, suh, Ah was a slave befo' de wah, suh.' "But when the war was over you got your freedom?' "No, suh; Ah was married den, an' Ah's been married evah sence.'

Piles Cured In 6 To 14 Days.

PAZO OINTMENT is guaranteed to cure any case of Itching, Blind, Bleeding or Protruding Piles in 6 to 14 days or money refunded. 50 cents.

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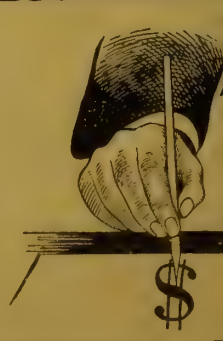

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CARE OF THE EYES.

"Most people who use glasses consider them a necessary evil; a sort of crutch to assist lame vision. Of course, those who wear them merely because they think them stylish or becoming are not deserving of sympathy; but unfortunately, the majority who wear them have reason to do so. If every one would follow the advice in this article, with few exceptions, they could postpone the use of glasses indefinitely, and many who are now using them could dispense with them within a comparatively short time. If school teachers would drill their pupils daily in Calisthenics for the eyes, as well as the rest of the body, the proportion of school children wearing glasses would be greatly lessened.

"Take care of your general health. Get plenty of sleep, and as regularly as possible. Remember, the eyes draw their nourishment from the same source as the rest of the body, viz., the blood.

"Always close the eyes for a few seconds when changing suddenly to a bright light. Do not face a light to read, write or work by.

"Do not sleep facing a light; not even moonlight.

"When your eyes are very tired, bathe them in hot and cold water alternately; first hot, then cold. Apply the hot and cold water also to the back of the head and neck, at the base of the brain. The hot application relieves congestion; the cold stimulates the blood and nerve vessels to renewed activity.

"Massage the back of the head and neck, along the spine. Notice the course of the optic nerve.

"Cultivate a cheerful happy frame of mind; with kindness and love in the heart. The eyes express the emotions. They are indeed 'the windows of the soul.' From a phrenological standpoint, this is readily understood.

"Hold some small object in your hand (a pin will do;) look at the head of it and change the focusing distance by bringing it to your nose, then extending as far as you can reach; varying from right to left; high to low, and vice versa, describing circles in different directions. While at this exercise, glance onward, lining up with some object at a distance. Vary the distance and direction.

"Standing, reach as high as you can; then bend, trying to touch the floor near your feet. With right hand on the floor, let the eyes look at a finger of the left hand while you bring the finger to your nose then upward as far as possible and if not too much strain back to the nose. After a short rest repeat reversing the position of the hands.

"It is a good plan to sometimes practice the exercise with one eye closed; then the other it naturally permits the stronger to do the work and only gets benefit in proportion.

"Looking in all directions, high, low, right, left, etc., in order that every muscle be kept in normal condition. Maintain position of head and body when reading, writing, sewing, etc. Better rest completely for few minutes than to double up, trying to rest and work at the same time. If you must read lying down, rest the eyes completely every few minutes; but an erect position is the proper one.

"The point to bear in mind is that ever muscle should be used, but not strained. Never try how long you can look at an object that is close to you.

"If you will observe these rules you will be well pleased with the results. An occasional washing with weak salt water is very good for weak eyes, and for many affections of the eyelids. About a level teaspoonful of salt to a pint of water.

"If any foreign substance gets in the eye, have it removed as quickly as possible. Never rub the eye that has irritating substance in it. If you can cry out of that eye, do so, but let it relax, so the object may float away. A flaxseed placed under the lid will give relief.

"Bear in mind, whatever affects the health, especially the nervous system, will eventually affect the eyes.

"Straining the eyes may induce headache, but cause for headache is likely to affect the eyes."—R. W. Travers.

THE HAY BOX.

In the German army for some years the "Hay Box" has been used to advantage, and it is recommended to housewives as a means of saving fuel and securing good results in cooking cereals, chicken, macaroni, or anything requiring long, slow cooking or steaming.

It may be only a close, wooden box with good cover lined with hay, asbestos, cork or other non-conducting material. The principle is to retain the heat which is generated by use of any ordinary coal gas or oil fire. Nests should be made in the hay in which will fit closely the pots containing the articles to be cooked. The food is to be brought to the boiling point in utensils which may be very closely covered and placed in the nests prepared in the hay or other non-conducting material with which the box is lined. The box must be closed immediately in order not to allow the heat to escape. The outside cool air cannot reach the utensils nor the inside hot air escape. The food continues to cook evenly and thoroughly. About twice as much time is required as in cooking over the flame. There is little evaporation. Consequently, care must be taken not to use too much water in preparation.

Many articles of food are better for long, slow cooking and as no fire nor attention is needed it proves an economical means of preparing food for the table.

While a very desirable cooker is on the market, many make their own so-called "hay boxes."

In many of the shows, prizes are offered for dressed poultry and for best dozen white-shelled eggs and best dozen brown shelled eggs. We would like to see this branch of the industry encouraged. The Poultry Associations and Farmers' Institutes should hold a joint show and in this way we would be able to reach more farmers and ranchers and gradually get them interested in standard-bred poultry.—Frank H. Thomas.

Mohair is likely to become an important product in the United States. At present, however, there are probably not more than 1,000,000 pounds of the substance grown here. It comes from the back of the Angora goat, three or four pounds being secured from each animal. The price of mohair varies from 25 cents to $1.25 a pound.

An infuriated man rushed into a newspaper office and demanded to see the editor.

"I am the editor," quietly responded he of the shears and paste-pot.

"Well, I want to know if this is the paper that said I was a liar."

"It is not; possibly it was our contemporary down the street." And then as he idly toyed with a paper-weight the editor added blandly: "This paper never prints stale news."

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Have had as much to do with making the farmers prosperous as any improved implement of the age. If you are interested in making money and saving time and worry, write us for booklet, "Over the Wire." The Williams Telephone & Supply Co., 133 Central Ave., Cleveland, O 1067 Oak St., Oakland, California

A Silver Dime
will bring THE FARM QUEEN, a large monthly, for one year. We will also send your name to 100 publishers requesting them to send you a free copy of their paper. Send ten cents today for all the above.
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Hold a Keen Kutter Saw in working position, and see how it fits the hand. Look along the blade—see how thin—how perfectly it is ground and hammered. Bend it so point touches handle, and it will spring back straight and true. Strike it and hear it ring. Try it on a difficult cut—it will work fast and clean. This is but one of the famous
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Aspinwall Mfg. Co.,
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A SHAVING soap should soften the beard and soothe the face. Common soap won't do this, but it will irritate and smart, and quite likely poison the face. If this means anything to you insist on getting

Williams' Shaving Soap

"The only kind that won't smart or dry on the face."

Send 2c. stamp for a TRIAL CAKE of Williams' Shaving Soap, or 4c. for a Williams' Shaving Stick, trial size, enough for 50 shaves. Address

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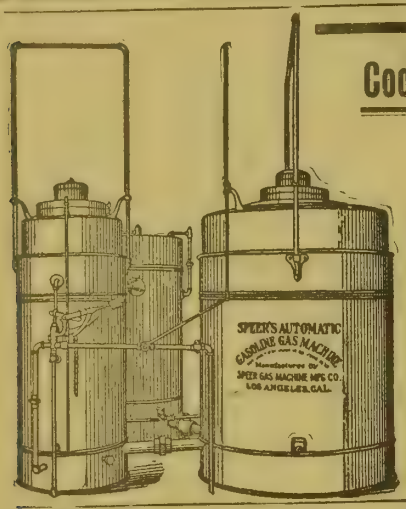

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Speer Gas Machine Mfg. Co.

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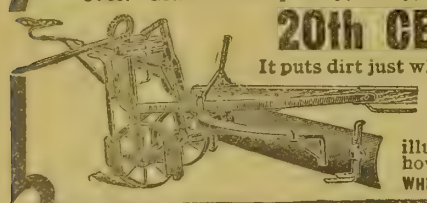
HOW MUD ROADS MAKE GOOD ROADS

Level those mud heaps, raise up the center, make the rain drain off to the sides instead of soaking in. Then your clayey, nasty roads will be smooth and pleasant to haul over. Grades them quickly, easily, with a



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It puts dirt just where needed. Easily guided and handled by one man, simple to understand. Reversible either way to 50 degrees. Made of steel; strong, rigid. Very popular with cities and townships. Our free new illustrated book "Delightful Roads" tells how to make them. Send for it now.

WHITE CITY GRADER CO., BOX D, WHITE CITY, KAN.

WILL NOT STRIP THE BRANCHES

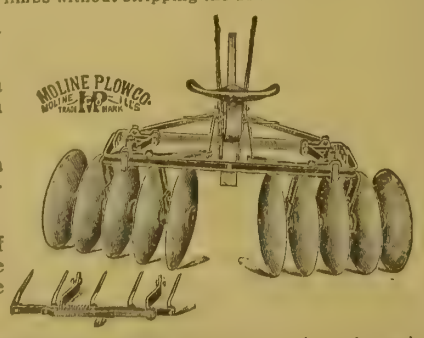
The Moline Reversible Disc Harrow is an ideal tool for orchard cultivation. The frame is built down close to the discs making it lower than any other harrow of its class; the levers are short and always in the center, making it practical to work under low hanging limbs without stripping the branches.

The harrow is all steel and iron excepting the pole.

The discs may be reversed in a moment without taking them from under the frame.

The gangs may be tilted by a simple adjustment of the malleable frame spreader.

Bearings have a double set of wood blocks, giving twice the wearing surface to meet the end thrust.



For Orchard Work the Moline Reversible is equipped with an extra long frame instead of extension head.

The correct design, great durability, ease of handling, low build, arrangement of levers and adjustment for setting the gangs in and out on the frame makes this an all around harrow. Protected by patent. Made in four and five foot, 16, 18 and 20-inch discs; four and five foot, 16 and 18-inch cut out discs.

Before buying a Reversible Harrow ask your dealer to show you the MOLINE.

Send Us Your Name and Address, enclose four cent in stamps to pay postage and mailing, and we will send you our FLYING DUTCHMAN SONG BOOK and Junior Catalogue Combined, containing Twenty-six old Familiar Songs with words and music.

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Bees and Their Care

RAISING BEES.

IT MAY be safely said that a place where farming, gardening or fruit raising can be successfully followed is adapted to the profitable keeping of bees—in a limited way at least, if not extensively. Many of these localities will support extensive apiaries. In addition to this there are, within the borders of the United States, thousands of good locations for the apiarist—forest, prairie, swamps and mountain regions—where agriculture has as yet not gained a foothold, either because of remoteness from markets or the uninviting character of soil or climate.

This pursuit may also be followed in or near towns, and to a limited extent in large cities. The ability of the bees to range over areas inaccessible to other farm stock, and to draw their substance from dense forests, when the timber is of the right kind, and the freedom which, because of their nature, must be accorded them, to pasture on whatever natural sources are within their range of three or four miles, must be taken into account in estimating the possibilities of a locality.

It will be found that very few localities exist in our country where at least a few colonies of bees may not be kept.—Rural Magazine.

THE BEE BUSINESS.

Where the business of beekeeping is pursued with assiduity and attention it is just as profitable as any other legitimate business, unless, indeed, the locality chosen happens to be a bad one, which is seldom the case. Care should be used in starting an apiary to get the best bees, in the best hives, fitted out in the best way. It will pay to buy from a man of known probity and honor, and who is an expert withal. Careful attention to this will save ultimate disappointment. It is well to order only standard goods, and should it ever become necessary to sell the apiary, one would be in a position to ask the regular market price for all fixtures. Odd-sized bee appliances are hard to sell. It is also important to secure pure Italian bees to start with! These are the favorites and with good reason.

Generally the manufacturers of hives can tell whether any given locality is a good one for bees, and will generally reply to an inquiry of this kind. As a rule too, they know what hives and appliances are best suited to the inquirer's environment. What to spend on a start depends on the condition of one's purse, and how to spend it is better left to the dealer in bee supplies, if he is a good, reliable man. If one is merely a beginner, it will be well to trust a good deal to his sense of right, but first find out if the seller is a good, honorable man.

When to start is a matter of taste. Usually people start in the spring, expecting to get some returns before fall. But bees are cheaper in midsummer and cheaper still in the fall. There is no objection to anyone purchasing bees locally, provided one knows for a certainty they are really good. Perhaps the orthodox plan is to make out an order for a set of hives, etc., fix these up and then depend on some nearby apiary for the bees. Usually one has to wait till the swarming season for the bees, and it is well so to wait, as a swarm works with great energy. If the seller of the bees will come with them and put them in the hive, the beginner will get a good insight into the proper handling of the bees. In fact no opportunity should be lost of seeing expert beekeepers actually at work handling bees. In this case, practice outruns theory, though it is a fact that many beekeepers have obtained their knowledge of bees from books, supported only by their own observations. It is the case in the United States today that one can rapidly acquire a beekeeping education when so minded, be the student man or woman. Usually when a woman begins to take a lively interest in beekeeping her friends and neighbors regale her with stories about fearfully stinging bees, and certainly these stories are calculated to frighten almost anyone. But modern apicultural science has provided for this contingency, and beekeeping has been robbed of its terrors. With a good veil over the face, a pair of beekeeper's gloves, and a good smoker, some of our modern beekeeping women are not afraid of the worst bees in existence. And here let us note the fact that some of the brightest, ablest and most successful beekeepers of our day are women. In England the Countess of Warwick maintains an excellent beekeeping school for women in which all the work is done for and by women.

Beekeeping certainly appears to be an ideal out-of-doors occupation for the weaker sex, and is ahead of many so-called womanly pursuits.

GOOD QUEEN NEEDED.

A Massachusetts bee man declares that the first requisite to success in wintering bees is to have a good queen. He says that a recent examination of his hives showed that all colonies that had been requeened during the current year contained from five to eight frames partly filled with brood on the first of October. These are the bees that will be full of life and which will hustle for honey in the spring. The bees hatched late in August or September, will probably all die during the winter. Wherever it is practicable bees should be kept in the cellar during the winter, as it is less difficult for them to maintain life than when forced to live outside. If an outbuilding is used the wall should be doubled, with three feet of sawdust placed between them and an equal amount overhead. One of the essential things in the winter storage of bees is darkness, and some contend that absolute quiet is necessary, but this has been proved untrue. If the bee owner has a basement in his barn, that will make an excellent place to store them. If the bottom boards of the hive are removed no other ventilation is necessary, provided the doors are opened for a few hours each week on nice days.

SWEET CLOVER FOR BEES.

We were out west and saw a great deal of sweet clover with bees just swarming on it and getting nectar. It made us feel like moving, and yet we could have sweet clover if we would sow the seed. It will grow in waste places, and we would very much rather see it along the streets, roads and all highways than the weeds that are so unsightly and of no account.

We saw it growing along all side streets. It sent out a sweet-smelling savor and the bees greatly delighted to work on it. Stock, especially cows will eat of it when it is young and tender, and as it keeps on sending out new shoots and blooming until frost, it is a valuable honey plant As it will grow in hard ground and soon kill out noxious weeds, it is valuable for that reason also. There is some in our home town, but we would like to see a great deal more of it. A prominent railroad of the South has had it in considerable quantities along its roadbed, and was requested by beekeepers living along the line not to cut it during blooming time, which the managers very kindly and considerately consented to, thus enabling beekeepers to receive great benefit.

Howell—What would you do if a man called you a barefaced liar?

Powell—Fool him by raising whiskers.—New York Press.

Only One "BROMO QUININE"

That is LAXATIVE BROMO Quinine. Similarly named remedies sometimes deceive. The first and original Cold Tablet is a WHITE PACKAGE with black and red lettering, and bears the signature of E. W. Grove. 25c.

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BEEKEEPERS' SUPPLIES

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H. J. Mercer

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Coulson's Special Dry Chick Food

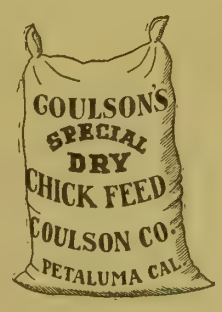
Feed to Your Chicks

And See Them Grow

Advantages of Coulson's Ready Mixed Chick Feed

The proper feeding of poultry is without a doubt the most essential factor in the raising of any kind of poultry for profit. Considerable advancement in the feeding of poultry has been made in the past few years, especially in the feeding of little chicks.

Chicks should be given a feed that makes healthy, well developed bodies. COULSON'S SPECIAL DRY CHICK FEED contains the ingredients that are best adapted to give nourishment to the growing chicks: Sweet tender seeds, cracked grains, blown free from dust, cut oat meal, tiny pieces of cooked and dried meat, fine particles of fresh cut bone, charcoal, burnt bone, and other things.



It is clean, sweet feed that is easily digested, and chicks show increase in weight, strength and beauty when fed it exclusively. Little chicks need no other food for the first six weeks. You can feed your chicks entirely on COULSON'S SPECIAL DRY CHICK FEED the first six weeks, at a cost of about 4 cents apiece.

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To be able to raise the chicks that you hatch and have early broilers to **SELL AT A HIGH PRICE**; to raise **NICE LARGE HEALTHY CHICKS**; to have chicks that will stand on the floor and crow when six weeks old; to raise chicks that you will be proud of, feed

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"I have fed your Special Food and Growing Chick Food to all my stock with one exception. I tried one lot of 350, and fed them my way or raising chicks back East. Results just fair. The other were fed up to three months on your Special Chick Feed, and the results were a surprise to me. The birds were large and the cockerels out of one lot I sold to the California Market and got a big price, with the request to send on to them at any time I had more cockerels of the same quality." Respectfully, A. P. WARD, Calistoga.

Coulson Poultry & Stock Food Co., Petaluma, Cal. Milwaukee, Ore.

Gentlemen:—

While in the poultry business I have tried several brands of Chick Foods and find COULSON'S SPECIAL far superior to any other brand.

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(Signed.) Floyd W. Scott.

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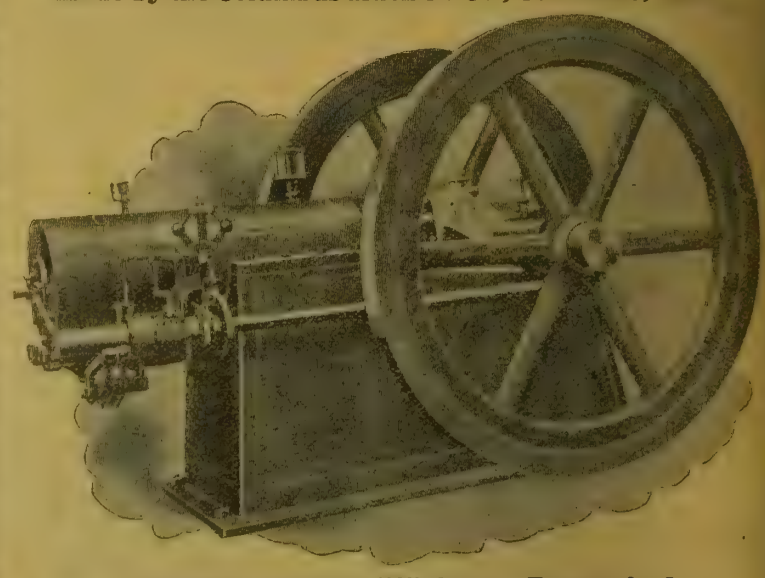

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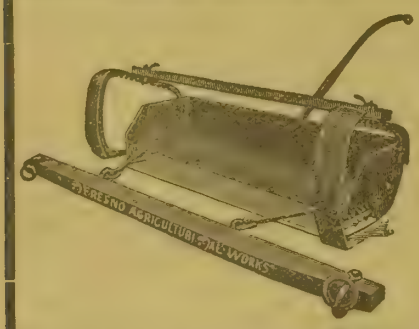

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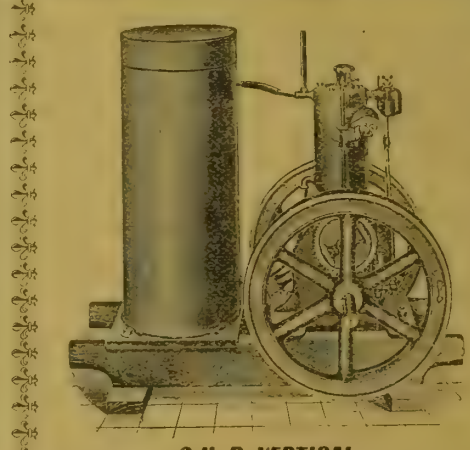

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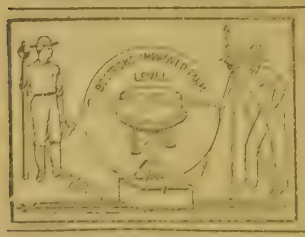

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California Cultivator

Los Angeles March 14, 1907 San Francisco

The Sweet Pea in California

WHEN one visits the miles of sweet pea farms in the Santa Clara valley and notes how rank and riotous the vines, how profuse and perfect the blossoms, the strength and purity of colors, he rapturously exclaims with the immortal Milton. "O flowers, that never will in other climate grow."

So cosmopolitan is this popular flower that its blooming season is eagerly awaited in all the less favored climes as the sweet harbinger of the perfect fullness of spring. The seed is sown in the cool uncertain days following the winter's close, and the first sweet pea to show its modest face is welcomed as an assurance that the days of chilling winds and biting frosts are past and the more tender, delicate plants may safely brave the elements.

In our land of sunshine the sweet pea may be our constant companion if judicious care be exercised to plant at proper periods throughout the year, for we have had them run rampant over fence and trellis while the gardens east of the Rockies were mantled with winter's snow and ice.

The unkindliest season of the year for this flower in California seems to be in mid-summer when, beneath our scorching summer's sun, its petals shrivel and shrink until the blossoms are small, poor in color and texture, and sadly deficient in numbers. Happy the garden owner, at this time, who has a somewhat shady spot reserved for the sweet pea.

At all times of the year it is desirable to have the roots so far beneath the soil that they will not become heated during the hottest day, and for this reason many experienced growers plant the seeds in trenches the bottoms of which are three or more inches below the surface. After the plants are well up the soil is filled in, a little at a time, so that at the end of a week or two the surface is once more smooth. They are high livers if any choice is given them and grow in greatest luxuriance when well supplied with food and drink.

Coulson's Mixed Foods

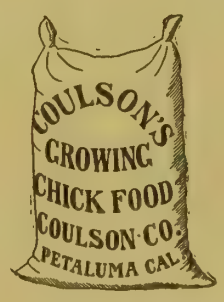
Must Be Used

From The Start

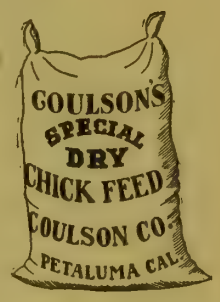
Waiting for meal of Special Dry Chick Food

If you want to get plenty of eggs in winter, you must start your plans by raising lots of chicks in the Spring.

Raise them on



Coulson's Special Dry Chick Food



for the first six weeks or so, till they are well feathered, strong and active. Then keep up their continuous and rapid growth by feeding

Coulson's Growing Chick Food

This will keep you free from the many losses resulting from improper feeding of the chicks, will bring them rapidly to maturity and will insure you a quantity of eggs in the following winter when prices are high.

Superiority of Coulson's Special Dry Chick Food

Gentlemen—

While in the poultry business I have tried several brands of Chick Foods and find ***Coulson's Special*** far superior to any other brand. Yours truly,

(Signed) FLOYD W. SCOTT.

Special Offer

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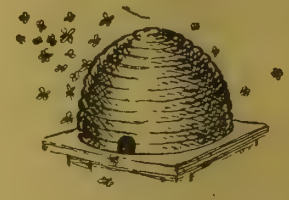

IN KENTUCKY.

Man born in the mountains of Kentucky is of fued days and full of virus. He fisheth, fiddleth, cusseth and fighteth all the days of his miserable life.

He shunneth water as a mad dog and drinketh much mean whiskey.

When he desireth to raise h— he planteth a neighbor, and lo! he reapeth twenty fold. He riseth even from the cradle to seek the scalp of his grandsire's enemy, and bringeth home in his carcase the ammunition of his wife's neighbor's wife's cousin's father-in- law, who avengeth the deed.

Yes, verily his life is uncertain and he knows not the hour when he may be jerked hence.

He goeth forth on a journey halfshot and cometh back on a shutter, shot.

He riseth in the night to let the cat out, and it taketh nine doctors three days to pick the buckshot out of him.

He goeth forth in joy and gladness and cometh back in scraps and fragments.

A cyclone bloweth him into the bosom of his neighbor's wife and his neighbor's wife's husband bloweth him into Abraham's bosom before he hath time to explain.

He emptieth a demijohn into himself and a shotgun into his enemy, and his enemy's son lieth in wait for him on election day, and lo! the coroner plougheth up a forty-acre field to bury the remains of that man.

Woe, woe is Kentucky, for her eyes are red with bad whisky, and her soul is stained with the blood of innocent moonshiners.—Martin (Tex.) Democrat.

California Cultivator

Vol. XXVIII—No. 11 Los Angeles, California, Thursday, March 14, 1907 Subscription $1 a Year

The English Walnut in the North

Present Condition of Walnut Culture in Oregon; The Propagation, Varieties Used, Soil and Climate Required, and Other Very Interesting and Valuable Information

By C. J. LEWIS, Horticulturist Oregon Agricultural Experiment Station

SCATTERED all up and down western Oregon we find the English walnut growing, in plantings ranging from isolated trees up to those of one hundred acres. The majority of those trees are in bearing and go to prove that we have conditions here suitable for growing the walnut. While many of the trees over the state never bear, or produce only inferior nuts, there seems to be ready explanation for their failure.

Southern Trees Useless.

The barren trees are either the Southern California type, principally Santa Barbara, or they are trees grown from nuts picked up at stores. The climate here is such that almost invariably the frost catches these trees, at times even injuring the tree itself. In sheltered places the Santa Barbara occasionally bears. The trees bearing inferior nuts are chiefly seedlings which were not chosen with care. We also find in places quite old trees that have made little or no growth, and investigation shows soil conditions to be such that only failure might be expected.

Thus we see that we must choose our trees with care and have soil of the right condition. With this care, orchards up to fourteen years of age are doing nicely. However, we have no old orchards. Our old trees are principally isolated trees and perhaps they are not a fair index of what a whole orchard at their age would do. As regards young trees we find, for instance, that Mr. Thomas Prince has three hundred and fifty trees planted in 1897, and two thousand trees planted in 1898. Last year he harvested between two and three tons of nuts and this year between four and five tons.

Dr. Finck of Dallas has a tree now thirteen years old which two years ago bore seventy pounds of nuts. Mr. C. H. Samson of Grants Pass has two hundred and fifty trees nine years old that began bearing at seven years. Mr. Tiffany of Salem has a tree fourteen years old which last season produced one hundred and fifteen pounds of nuts. Mr. E. Britt of Jacksonville has a tree that has never failed a crop for twenty years. In addition to these there is quite a large acreage of young trees.

In the enighborhood of Mr. Prince's orchard at Dundee we find about three hundred acres. Mr. Ferd Groner of Hillsboro has eighty acres. At Jefferson, Shedd, Jacksonville, Ashland, Merlin, and Grants Pass, are quite large plantations. From the crops taken from isolated trees at twenty years and over we might assume that the orchards at that age will be heavy bearers. However, we have not as yet the proof.

While I myself have such faith in the future of the walnut in Oregon that I would feel willing to set out a walnut orchard, I would not want to give such advice as to lead anyone to stake his all in walnuts. Let us be conservative and plant in moderate quantities, and the near future will demonstrate without a doubt what the walnut will do. The future seems very rosy, but until our young orchards have reached an age of about twenty years and have shown that they are heavy bearers, we have not the right to proclaim that the walnut in Oregon is a decided success.

Propagation and Grafting.

At present among walnut growers there is more or less controversy as to whether we shall plant nuts, seedlings, or grafted trees. Some maintain that only by planting seed in the place where the tree is desired can good results be realized; but broad investigations over the state do not bear this out.

Trees are grafted on their own stock (Juglans regia,) or the California Black (J. Californica,) and on the American Black (J. nigra.) We also have several methods of budding and grafting, but none of the methods has so far brought a large percentage of good grafts. Occasionally we hear of men who claim that they can graft over 90 per cent., but further investigation generally shows that such is not the case. Of the American grafters, Mr. Geo. Payne of California is about the most successful of whom I have heard.

When trees are grafted on their own stock they make rather slow growth and for this reason the method has not met with much favor. When grown on California Black walnut stock they make a rapid growth and seem to come into bearing sooner, and will, it is claimed, grow in heavier soil. On American Black walnut they make rather slow growth.

Mr. Prince of Dundee thinks that a good deal of the failure in grafting has been due to the fact that too soft wood has been used, and that where two-year-old wood has been used better success will be met with, as the one-year-old wood is soft and tends to be pithy. Doubtless he is right.

On the other hand, Mr. Payne of California, I believe, uses the yearling wood, grafting either the two-year-old or the four-year-old tree. The three-year-old tree is too large at the collar to be easily grafted and too small to be top-worked easily. The two-year-old tree can be easily root-grafted and the four-year-old can be easily top-worked.

The Right Kinds.

The question of variety is one every grower must solve. At the present time there is practically only one point on which all growers unite in regard to varieties for Oregon, and that is, they must be the late-blooming kinds, known as the French varieties, such as Mayette, Franquette, etc.

Each nut has its champions, but the two varieties named are the general favorites. Time alone will settle the supremacy of any variety or varieties over others; but it is only reasonable to suppose that the walnut, like the apple, will demonstrate that each variety is adapted to certain conditions, and fills a valuable place either commercially or as a home nut. Already certain characteristics are being associated with each variety—thus, the Proepurturien bears while very young and the nut is of fine quality, being an excellent home nut.

The Chaberte seems adapted to high altitudes and poor soils, and the kernels separate easily. The Franquette is noted for its good size and prolificness; the Mayette, for extra good quality; and so on down the list. These nuts also have their weak points, which will be brought out in the descriptions following. Not only do I expect to see each variety establish itself in some one of our varied conditions, but I also look for more varieties,—for seedlings superior to anything we now have.

Again, we can improve the varieties we already have, by selection. They already show improvement over the foreign nuts in both size and flavor. Our nuts are now being sought for by the fancy grocers, being considered the best nuts on the market. Let us give these varieties a fair show, and time will demonstrate their value.

Franquette.

Originated by M. Franquette in the early half of the last century; a large nut, rather oblong, being pointed at apex and slightly flattened at the base. The valves formed by the joining of the two halves of the shell are very pronounced, bulging out to the extent that the nut can be lifted by the appendage. Passing from apex to base are suture lines, giving the nut a more or less ribbed appearance. The veining on the shell is not very pronounced. Shell, medium to thin, not being as thick as that of either Mayette or Parisienne, but being at the same time well sealed and thick enough to ship well.

The inner partition shell separating cotyledons is thin and separates easily from the kernel. The kernel is plump, filling the shell and fitting rather closely along the valve lines, thus not allowing as easy separation of meat from shell as with either the Mayette or the Parisienne. The pellicle is pale yellow and glossy and is pronouncedly veined. The convolutions are quite large and coarse. The quality is excellent, having a rich, nutty flavor. The Franquette seems to show a tendency to be uniform in size and shape. It is a late bloomer, very hardy and prolific, and thus far has shown a tendency to be free from diseases.

Mayette.

An old, standard French variety that has been in cultivation for a long time. It is the Grenoble nut of commerce, and comprises fully half of the French crop. It is often spoken of as a medium to small nut, but this, I think, is due to the fact that we have, to my knowledge, no isolated grafted orchard here on the coast from which we can select seed, and much of the seed obtained abroad has been inferior. Again, we sometimes find nuts sold as Mayette which are not.

The true Mayette is above medium, to large, in size. In fact, some of the largest nuts I have collected in Oregon are Mayettes. In form it is not so oblong as Franquette, but slightly broader, and flatter at the base and more blunt at the apex. It is not ribbed as pronouncedly, but the veins are more prominent. Very deep pits occur in the region of the valve, which is less pronounced than with Franquette. The shell is somewhat thicker, the kernel large and plump, separating very easily from the shell and from the cotyledon partitions. The pellicle is dull and of a light brown color. The convolutions are not so large as with Franquette, but are more numerous and more sharply pointed, while the veining is less pronounced.

In quality, it is of the very best, being a dessert nut of the highest quality and bringing the highest price in the market. Fuller, in his des-

Continued on page 279

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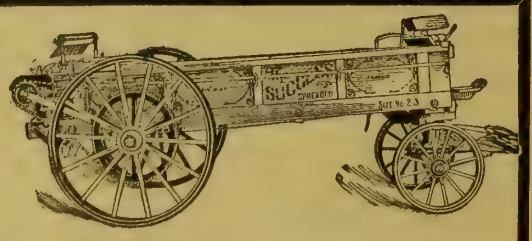

And after you have seen it, inquire into its record. Ask some practical man who has used one what he thinks of it. Ask him—

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Deciduous Fruit Culture

By J. W. MILLS

TRAINING THE THOMPSON SEEDLESS.

THOMPSON Seedless is generally tied to stakes, but the ideal way is to train it over a wire trellis. A Sacramento valley grower told us that from thirty vines of Thompson Seedless grown over a wire trellis, he picked 2000 pounds of grapes. His vines were planted ten feet apart. This made fourteen and one-third tons per acre of green fruit. On some adjoining vines, same age, but tied to stakes, he got but four tons per acre. The latter was from an acre plot so that it was not figured out from a few vines. This was a difference of over 10 tons per acre in favor of the trellised vines, a very good profit on the wire used.

On the other hand, a neighbor had a different experience during a cold spring. He had some Thompson Seedless on both trellis and stakes. A late frost killed all the fruit on the trellis, being a total failure that season. On adjoining vines that were tied up to a six-foot stake, he sold $2.40 worth of grapes per vine. This again illustrates the uncertainty of fruit growing. On general principles, the trellis is the best, but it is well to expect some bad luck even with the best methods.

It is not necessary to tie this grape to a stake or trellis till it begins to bear. It will perhaps grow in better shape, but the main stalk need not be trained long till the vines commence to bear. A trunk a foot high will be about right till trellis time comes. It is well then to prune and tie so that a permanent leader will remain on the wire. Long canes are allowed to grow out from these. The wire is stretched about three feet from the ground and the heavy mass of foliage and vines will swing in the strong spring winds and be uninjured. Last June, a severe wind storm passed up the valley and ruined nearly all the vines that were tied to stakes while those on trellis were practically unharmed. When the grower can well afford to put up the trellis at the beginning of the second year, it may be done to advantage, as the young vines may he tied up in position without the extra expense of using extra stakes.

GRAFTING OVER OLD VNIES.

There come to us sometimes, inquiries about grafting old grape vines, some thinking that they may be grafted above ground to advantage. This is not the case. The only practical way to graft old vines is to cut them off about an inch below the surface of the ground and split the stump, put a wedge-shaped scion in on each side of the split, making the inside barks match, cover with dirt without wrapping and stake so that the scion will not be knocked out. The scion should have two buds, no more or less. The dirt should be mounded up over the scions, leaving the top bud at the surface of the ground. Grape grafting as described must be done about the middle of March. At this time the sap starts in the vines and the uniting process commences between the scion and the stock. Large quantities of sap will flow out into the soil and when this mixes with the dirt it will seal up the wound and aid in the healing process. This will sometimes soak to the surface and when it dries it will form a hard coat at that point. If the scion happens to be growing beneath the surface, it will push around under the crust and will die if not attended to. If rains come at the proper time, the crust will be softened and no bad results will follow. Should dry weather prevail, this surface should be stirred with a rake, great care being taken not to disturb the scion. After the grafts start, it will be found necessary to remove the soil from around them and rub off the suckers that always start. The soil should be packed around the stump again and when suckers appear again, the operation should be repeated. It pays to stake grafts before they get tall enough for the wind to catch them. The loss will be heavy if this is not done. In connection with this, the tops should be pinched off when they get to be a foot high. This strengthens the vines. Packing the soil high around the new top aids in bracing it, but nothing will take the place of the stakes.

Old vines may be budded during the time they are making their spring growth. The vines should be pruned to short stubs and when the new shoots develop enough fiber not to snap when they are bent enough to cause the bark to buckle, they are ready for budding. Take buds from new and succulent growth of the variety wanted, cut them from the part that has well-developed leaves, cut off the most of the leaf, leaving a piece on the stem about as large as a dime. Slit the new cane on the old vine for about an inch and a half, bend it so that the bark will buckle out and separate from the body of the stem. Insert the bud with the leaf stem on and let the branch straighten out again, wrap snugly with waxed cloth and leave it on till the bud knits. This will be in a couple of weeks. If the leaf stem turns yellow and separates with a clean surface from the bud, the job will be a success. If the stem gets black and sticks, the bud is dead. These buds should be left dormant during the summer, prune to them the next spring.

WE STILL BLEED.

A subscriber asks: "Who was the originator of the red, white and blue sign which is adopted by all barber shops in this country? Who started it, and when and where and why was it started?"

Hundreds of years ago the barbers were also the physicians and surgeons of the neighborhoods in which they lived, and combined blood-letting, then a common practice, with shaving and hair-trimming. Brewer says that the gilt knob at the end of the pole represents the brass basin which was formerly used by barbers in lathering their customers. The pole indicates the staff which men who were being bled (firmly held grasped in their hands to promote a free flow of blood, and two spiral ribbons, one of red and the other blue, represent the bandages which were placed round the arm after the operation. Why the barbers adopted red and blue has not been accurately ascertained, but the supposition is that these two colors were employed to impress the imagination of their customers, there being a wide-spread belief in the magical virtue of certain colors. The pole is now used as an outside sign, but the blood-letting continues inside, thus showing the power of tradition or a bad razor.

EUCALYPT PLANTING.

In answer to a letter of inquiry from A. K. Aaberg of Modesto, E. O. Faulkner, Manager of the Tie and Timber Department of the Santa Fe Railroad, writes from Topeka, Kansas, as follows:

I am in receipt of your letter of Jan. 24th, with reference to the planting of Eucalyptus trees, and beg to say that this is our first year of planting, consequently so far we are proceeding on the experience and results of others.

The Eucalyptus may be divided into two or three classes, the Ironbarks, which are very long lived, but of slow growth and few raised so far in California, a second class which grow quicker although they do not give quite such long service, yet the difference is scarcely comparable with their growth, and a third class which do not give good service in connection with ground use, but all have their distinct place in other respects.

We have for nearly two years been investigating the matter, and in many places in California have found trees of the second class thriving excellently so far as growth is concerned, and wherever used the reports of service have been favorable. Of these I have personally seen Rostratas seventeen years old with a butt diameter of 27 inches, height over 100 feet, and others fifteen years old, two feet in diameter, and again twelve years old, 16 inches diameter. I have also seen numerous sugar gums (Corynocalyx) all sufficiently large for railway purpases fifteen years planting, in addition to the Forest Red Gum (Tereticornis), etc. It would take too long to go over every individual case, but while these are slower in growth than the Blue Gum, yet the difference does not seem to be very great, and they have a value for many purposes which the Blue Gum has not.

As to the soil, some of the varieties are reported to do better in a sandy loam, while others like a stronger soil, but I do not think there would be any great difficulty in the varieties mentioned growing on any good soil, provided there was no hard pan near the surface.

As to the rate of growth. In May last I was at the El Toro Plantation, owned by Mr. Dwight Whiting of Los Angeles, and there found many trees two years old twenty feet in height, three inches diameter, and all looking well. I have also seen Sugar Gums six years old 12 inches in diameter, but this is probably an exception.

As to the varieties, we are relying largely on:

E. Corynocalyx (Sugar Gum), E. Rostrata (Red Gum), E. Tereticornis (Forest Red Gum), with some E. Citriodora (Lemon Scented Gum) and E. Resinifera (Red Mahogany).

These are about all the kinds that could be had in time this season, but we intend trying several others another year, and if they do well we will include them later on. There is very little good Eucalyptus timber in the market so that it is hard to ascertain the market price, but I have heard that well seasoned Eucalyptus lumber is worth $100 per thousand in San Jose, and I have also heard quotations of $10 each for forty-foot poles 7 inches diameter at the top, of some of the varieties mentioned. There is no question but that this timber will come more into use as the supply of hard wood decreases, because the Government reports show that the Sugar Gum, for instance, is more than twice as hard as Oregon Fir or Long Leaf timber, harder than White Oak, and almost as hard as the best grades of American Hickory. These tests were taken from trees only fifteen years old by the Government Testing Plant at Berkeley, California, and with such a record there does not seem to be any question as to a future market, once there is a regular and constant supply.

Our grove is located near Del Mar about midway between Oceanside and San Diego, three miles back from the coast, being sheltered from the strong sea winds but near enough so we can get the benefit of the moisture in the air. We are planting in rows eight feet apart and five feet apart in each row. They will be watered from tanks twice each season for the first two years and thoroughly cultivated so as to retain the moisture, but not irrigated. We expect to cultivate once the third year, after which time we believe they will be able to take care of themselves after the fourth year when the trees will have shaped themselves the intention is to cut out every other tree, leaving half the number or about five hundred on each acre to mature, and out of the trees removed we will get from each one fence post if not more. There is no hard pan that we know of on our ranch, and the washes show soil to a depth of eighteen feet. The land is rolling in parts and elsewhere level, some soil being a sandy loam and again a black gumbo. It is reasonable to expect that in one body of 8650 acres in Southern California, all of which we intend planting, there will be varied conditions of soil and contour.

KEROSENE EMULSION.

In one formula freshly-slaked lime is used; and in the other flour. It is found that a perfect emulsion can be made by slaking one-half pound of good quicklime and emulsifying with one quart of kerosene to two gallons of twaer from three to fice minutes. it does not appear to be a matter of much moment whether the lime be dry or powdery when mixed with the kerosene or not, as kerosene emulsions have been made from both air-slaked and freshly-slaked lime, the lime being made into a thin cream with water before adding the kerosene.

When flour was used, it was found that eight ounces was sufficient to hold in suspension one quart of kerosene and even two ounces would make a temporary emulsion for immediate use. If the flour was scalded before adding the kerosene, two ounces of flour was sufficient to make an emulsion that would stay up for more than a week. The flour emulsion is considered the more useful where it is not desired to discolor the tree on which it is used.

The present popular standard for making kerosene emulsion is as follows:

Whale oil soap, one-half pound; kerosene, 2 gallons; dilute to 20 gallons with soft water. Cut the soap into small pieces and dissolve in two gallons of warm water in about a 5-gallon receptacle. While away from the fire, add two gallons of kerosene and boil hard for an hour to thoroughly break up the oil of the kerosene. Instead of boiling, the emulsion may be put into the spray pump and churned violently for ten to fifteen minutes. To do this, turn the nozzle into the barrel. Dilute when ready to use and mix again thoroughly.

On hardy trees, 10 per cent. kerosene is often used, but on young growth, especially of peach trees, it must be used with care. This is made by adding one gallon of kerosene to three of water and churning violently, as suggested above for about 15 to 20 minutes, or until the oil ceases to rise to the top. When this is done, dilute to 10 gallons. Kerosene and kerosene emulsion kill the insect by contact with its body, and are essential only for sucking insects. For this reason, also, the work must be done very thoroughly.

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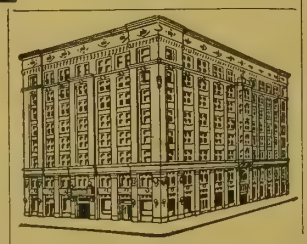

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Johnny—"A boy wot comes t' school wid a smile on his face."

With the Citrus Growers

By J. W. MILLS

DIE-BACK.

THE term "die-back" may cover the condition, which it describes, and may be brought on by several separate troubles, or perhaps any one of them. It is simply the dying back on the ends of the branches of citrus trees. There is a disease known in Florida as the "Florida die-back," and is very destructive to the trees. It does not kill them outright, in fact it may not kill a tree in a lifetime, but will render the tree valueless. It is a very deceptive disease.

Evidence of the Disease.

The tree will present an unusually vigorous dark green appearance in the spring and send out a luxuriant growth and the owner will congratulate himself that the trouble has disappeared. As the season advances, the leaves turn yellow and drop off and the new growth will die and curl for a considerable distance down on the new growth, usually within a few inches of the previous season's growth but it may not take place all at once

It will die back a few inches when the twigs will make another attempt to grow, will throw out new growth of a sickly appearance, die back a little more, make another feeble attempt to grow and at last die almost to the point where the start was made at the beginning of the season. During this time, continual attempts at growth have occurred on the buds near the terminal growth, resulting in a rosette of buds. This is more defined in the case of lemons than with oranges.

After the disease has been present on a tree for a few years and no pruning has been done, there will be clusters of dead twigs all over the outside of the trees, sometimes surrounded with dark green leaves from the growth of sprouts. The lower part of the trunks of the trees will be covered with water sprouts that afford an outlet for the extra flow of sap that has been cut off by the death of the terminal branches. The root system seems to be in excellent condition and the supply of sap is therefore not interfered with.

Another characteristic feature of the disease is the dropping of most of the fruit with a brown discoloration of part of the surface of that which stays on the trees. This discolored part of the skin of the fruit is hard and as the fruit ripens, cracks on the surface. At an earlier stage, a good many of the oranges crack entirely open. The same brown colored growth appears on the young growth in the form of granules.

Its Presence in California.

This disease has made its appearance in various parts of Southern California. One very pronounced case is near Pomona, and several nearby orchards are slightly affected in small areas. The most widespread and aggravated condition of this disease that we have ever seen, is in the San Bernardino valley. In every case which has come under our observation, the location of the groves has been the same in relation to the mountains near the southern base.

It occurred to some growers that the trouble was due to a lack of fertility in the soil. Analyses of the soil showed that such was not the case, but practical tests were made with stable manure, complete commercial fertilizers and with nitrate of soda straight. None of these had any effect in one particular case. Trees almost adjoining never were affected and always bore good crops. On the affected area, tiling was practiced with the idea of areating the soil, but with no effect.

It was our pleasure to see one grove in the vicinity of Highlands, which was, until last year, so badly affected with the "die-back" that the owner intended to cut it down this season, but a neighbor who asked to have a trial at it was given permission, and with special treatment and fertilization, the grove held its fruit and new growth, and is now in a thrifty growing condition.

This grove has the dead wood that is so characteristic of the disease still on the trees, and this with the new growth of the past season and the crop of fine fruit, is evidence that the disease can be cured. Another case was pointed out where the trees were at one time in an apparently hopeless condition, but are now as good as any trees in the section.

The method pursued was a good application of fertilizer in conjunction with a spraying of Bordeaux mixture, five pounds of bluestone, five pounds of lime to about seven gallons of water, applied just as the fruit is setting and again about a month later. This seemed to give the disease a check, which, when followed up the next season, completely eradicated it.

If this is a reliable remedy, it is worth a good many thousand dollars to the state. The man who does the work has such faith in it that he agrees to take his pay from a percentage of the increase in the crop.

Fatal Bowel Trouble.

We have a thorough-bred Hereford bull which has a diarrhoea or running off from the bowels in a very liquid conditon. The animal has become poor. I notice a whitish crust soon forms over the discharges, out in the sun. We turned the animal in the barn to eat barley hay for three hours each day since we found him with such liquid discharges, which was three weeks ago. We had one of our registered Herefords die that was troubled in the same way last spring. It died six weeks ago. They cost us $200 per head by buying eight head; please tell me what causes the trouble and what shall I do to cure the animal?

The bulls had been stall-fed before we bought them; since we have owned them (three years or more) they range with the stock cattle. A. E. M., Valley Center.

Usually these conditions arise from either irritating food or impure water. sometimes the cause is tubercular, in this case, as the bulls were high-priced ones., they were probably tuberculine tested before you purchased them. I would make a mixture of one pound of bran, one pound of middlings to one-eighth of a pound of oil cake and feed it to the bull, mixing with it three times a day, one ounce of powdered chalk, one ounce of bisulphate of soda I would give him all the good hay he will eat clean after feeding him the bran mixture, and then take it away and not let him have it until next feeding time. Limit his water to a bucketful three times a day. After twenty-four hours, if he is better, I would increase the bran to double the quantity leaving the same quantity of middlings and oil cake and still feed him three times a day until he recovers his lost condition. If this chalk mixture fails to correct the condition add to the bran twice a day, powdered opium, powdered gentian, powdered fenugrek; each one ounce, containing the chalk and soda with it. The opium powder is only to be given twice a day, give three doses, omit one, repeat until relieved.—M. E. S.

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Roses

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California Horticulturally

By JOHN ISAAC, Sacramento, California

AN INTERESTING REPORT.

THE second biennial report of the Commissioner of Horticulture is now in the hands of the binders and will be ready for public distribution in a few days. It is a very exhaustive report, of 557 pages and contains several papers which will be of great value to our fruit growers and Horticultural Commissioners. There is an outline of the science of entomology, in which, in as compact a manner as possible, is given such instruction and information in this branch as may be of service to those who desire to learn something of it, but cannot devote the time or study required to master the whole subject. A very valuable paper on the Coccidae of California will be appreciated by the Horticultural Commissioners, and is a publication which has long been needed. There are papers on the Codling Moth parasite, the Gypsy and Brown-Tailed moths, a review of insects of the year, reports of all the County Horticultural Commissioners, and the full and interesting report of the last Fruit Growers' Convention, held at Hanford. Altogether it is the best report ever issued by the Board of Horticulture or its successors, the Horticultural Commission. A feature of it is the many illustrations, and especially several beautiful colored plates, which illustrate the text.

PRUNE GROWERS ORGANIZING.

In accordance with a resolution adopted by the last Fruit Growers' Convention, a committee of five, consisting of J. Luther Bowers, Mark L. McDonald, Thomas Jacobs, H. A. Beekhuis and F. M. Crandall, was appointed by Hon. Ellwood Cooper for the purpose of taking steps looking to the organization of the prune growers of the state and the profitable marketing of the prune crop. This committee has held its first meeting, at which it was determined to hold a mass meeting of the prune growers at an early date in Santa Rosa, and consider there the best method of carrying out the expressed object of the resolution. It is probable that out of this effort some method will be hit upon of keeping this great branch of our horticulture from ever again getting into the "Slough of Despond," in which it has wallowed so long.

TUSSOCK MOTH.

The Tussock moth appeared in destructive numbers in the Pajaro valley apple orchards last season, and growers there became alarmed, believing that it would continue to increase and become a most serious pest. The history of this pest in California shows that it occasionally appears in numbers in small localities where conditions have been favorable to it, only to disappear again, and it is often many years between visitations. It is now reported from the Pajaro section that a number of parasites and natural enemies have already attacked the caterpillars and eggs of the pest and that there is a strong probability that it will be kept in check by them this season.

Don't be too quick; pneumonia
Is looking after youse
Who doff your union suits too soon
And don your peek-a-boos.

MASSACHUSETTS AFTER PARASITES

Boston, or at least that portion of it known as Brookline, which is a suburb, seems to be in earnest about getting rid of the Gypsy and Brown-tailed moths. Mr. A. D. Chandler of that town has been sent on a mission to California for the purpose of investigating our method of fighting injurious insects with their natural enemies. He has made a thorough investigation of the work, and expresses himself as much astonished and gratified at our success along these lines and at what he has learned, and will return to Massachusetts a confirmed advocate of the parasite method of controlling pests. Incidentally he came prepared to make a contract for the state of California to co-operate with Massachusetts in the extermination of this plague, and in an interview with Governor Gillett, he was informed by the Governor that while California could not enter into any agreement with other states to do work in their territory, still all that was possible should be done to assist in the work, as he considered it policy to take precautionary measures against the introduction of this great plague into California.

Bad Milk.

I have a Jersey cow, 5 years old, comes fresh in April next. For the past month we have not been able to use the milk or butter because of a strong rancid taste and odor. She went the same way last year, but we did not notice it until about six weeks before she calved.

She has no pasture, but I feed her sweet cow hay, bran, shorts, rolled barley, cracked corn, and middling, but hardly any green feed. The man I bought her from two years ago says he knows nothing about the matter so I decided to ask you as I am always an interested student of your work in the "Cultivator." I am told this is a common trouble with cows, but being a city man my experience is limited to this one.— H. W., Petaluma.

While this may be the fault of the cow, the cases where the cow is to blame are too rare to assume she is at fault without positive trial. If you will take a preserve jar and wash it clean, cover the top with a piece of cotton batting and put it into the oven, giving it a baking, it will be sterile, then wash the cow's udder, rub her clean, take a sheet, pin it over her; now milk four streams of milk on the ground from each teat.

Then carefully uncover the jar, milk one stream from each teat into it, and cover at once with the sterilized cotton, stand the jar where the milk is usually kept—in twenty-four hours open it taste and smell it.

If the cow clears herself, then wash the milk pails, pans and pitcher with hot sal soda water. Rinse with scalding water, turn them up to drain dry. This will end the trouble, if it is thoroughly done. At the University a professor that is as careful as anyone could possibly be about his cow and the milk, had more than his family needed and supplied a neighbor. The little lad that carried the milk to the neighbor was not on hand one night, so the professor took it himself. Rapped at the kitchen door, out came the maid, said, "Yes sir," and taking the can from his hand fished out the milk pitcher from the dish pan, taking up the dish cloth gave it a swish out with the dishwater and then dumped into the pitcher that carefully drawn milk. I asked the professor if it kept; he said, "I did not like to ask."—M. E. S.

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'Twas not meant for you alone,
Pass it on.
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Let it wipe another's tears,
'Till in heaven the deed appears—
Pass it on.

—S. E. Kiser.

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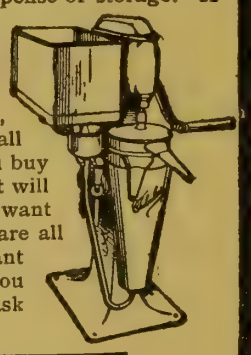

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Live Stock and Dairy

By Mrs. Minna E. Sherman, Fresno, Cal.

CALIFORNIA RANCHING.

IT IS poor economy to work a horse down to a barrel stave condition.

It will be months before he recovers his normal degree of strength. As Pat often says, when we meet a thin horse on the road: "Sure, if he had money in his pocket it would not be beer, but barley, he would buy." There is hardly a more pitiful sight than a weary, weak horse pulling a load. I know a church that I would rather not pass on Sunday, the horses tied there are too thin, they patiently wait while their masters worship God. The God of mercy.

Rest Needed.

We all know when a man works until he is thin, he is in a serious condition. He always fails to do effective work; he is ready to take any disease that comes along, and he may never fully recover from the after-effects.

It is the same with a horse; once overworked and he will never again be as resistent to strain and often dies early. A little care—25 cents worth less of work, by shortening up the hours of the day's labor, will add 50 cents to his working value later on. Avoid forcing a horse to greater strain by giving him condition powders to force nature along; give him rest instead by shortening his hours of work.

When a team is weak it will crawl across the fields. I have timed some that did not plow an acre a day. Yet, the driver's time and board had to be paid just the same. That work was costing too much. When this occurs, take off one plowman and put the team into the barn to rest. Let one man work the two teams, day and day about, so that one is resting while the other works. Two acres a day will be plowed and one man's wages will be saved.

Fast and Slow Teams.

Where several spans of horses are plowing in a vineyard or orchard, one slow team will reduce the work of them all. Tom will not start his team across the field until Dick's slow team has come up, turned, rested and started back again. All the men hold back for the slow team.

The older horses on the ranch are often slower than the colts, yet, as they have hardened muscles, will last to the end of the season while the colts will have to be turned out to rest. Yet, if all are worked in one vineyard it is at a loss. I put the older, slower teams on one vineyard and the quick horses on the orchard, out of sight of each other. When a team grows slower it is sent into its own class.

The slowest horses are put into the single plows, for that is where careful work is needed. The fast horse tears the vines, breaks the stakes and often does considerable harm to the vineyard. A slow horse is a gentle one; he is apt to stop when it pulls harder than usual. This prevents injury to the larger roots of the vines.

On a ranch there is a place for all kinds of horses to be put to doing effective work. If this is left to the men it is helter-skelter business and the expense will mount up rapidly. I sometimes think a ranch could be run on the money expended useлessly for lost time, if someone was always at hand to check and make everything tell to greatest possible advantage.

Ranch Laborers Scarce.

Now, that San Francisco is building again, men are scarce. For the first time we have had trouble in securing good men. The men now on the ranch could not be held in council as to the best ways of working, for they are not anxious to work in any way at all. My faithful cook held this conversation with one of them last week. It was the engineer at the pumping house. He was a new man; he had been flushing the house sewer; under the pressure one of the tiles had broken. She said to him, "It is too bad that you have the trouble of mending that pipe." He replied, "What do I care if it breaks every day, if I have to work I would just as leave mend it as anything else." He hired as an engineer, but could not blow off a boiler, so his time was blown off the ranch book promptly. Dear old dad, I miss him in the engine room, he has spoiled us for ordinary labor."

These things may seem too trifling to write about, yet they are all losses and it is only by constant putting into shape the work as it runs along, that it is held up to high effectiveness.

The Household.

Farming is like housekeeping, it consists in a variety of little things, each well done and on time. The season of sowing and reaping come in their appointed time and will not wait our convenience.

The slack housekeeper does try to think that she has caught up with her work when she makes a semi-annual house-cleaning. She does not consider the overwhelming discomfort of the upheaval in which important articles are mislaid and often not found until the next upheaval strikes the unhappy household. This is not conducive to happiness, yet the house is called a home. "A home," no peace, no quiet, plenty of dirt.

A little reflection would show the folly, for a small monthly cleaning of each room in turn and no wild turning out of the husband from his comforts will keep husband and wife good comrades all the while. I wonder how many men and cats are scared away from home by the housekeeper, but I am drifting too far from the ranch.

Keep the Ranch Clean.

Yet ranch working is nearly the same as housekeeping. Clean a ranch twice a year and how the weeds would thrive and the expense creep up. The horses will grow thin for the want of the good hay that did not grow as the land was seeded too late. The cows drop in their milk for want of the corn that was not planted to fill the silo.

All is outgo, no income between the crops to help to grow new crops. See how utterly tired and discouraged the owner has become! Nothing pays! He laments his inability to sell out at a fancy price! Who will buy a run-down ranch! Really, today, half the trouble is in always being late.

In the good old Saxon days a common nickname was Unready, Edward the Unready. All the unreadys did not die off then.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

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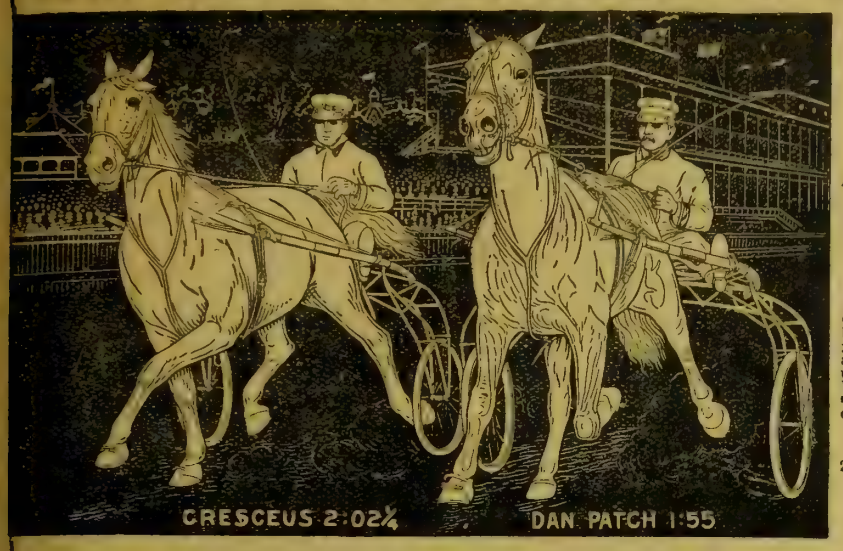

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COWS MAKE MONEY

if they are properly handled and if the right kind of apparatus is used.

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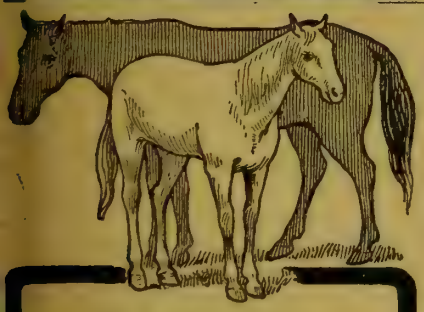

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if you would have the **right horse.** Don't handicap a promising colt with unwise management during the first few months of growth. Make the grain and feed he gets more beneficial by giving a little of Dr. Hess Stock Food. It increases digestion by supplying the system with bitter tonics, iron for the blood, nitrates to expel poisonous material from the system; such ingredients being recommended by Professors Winslow, Quitman, Finlay Dun and all the noted medical writers.

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Smaller quantities at a slight advance.

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FOR SALE—RICHLY-BRED YOUNG bulls from cow having High Official Yearly Records. Also a few heifer calves of best breeding. For particulars address
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Fine young Bulls, by a magnificent son of Golden Ferns, had out of imported cows. Also a bull calf out of a daughter of Golden Lad by a son of Golden Lad, making him 50 per cent. Golden Lad. We sold his full brother to the late Gen. Shafter, who won in every class he showed him in at Sacramento in 1905. Will sell at low prices considering breeding, to make room for new stock.
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High Grade Stock of Best Strains.
Young Stock For Sale.
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In California the successful ranchers are the ready ones, if at the beginning of the planting season a definite plan was made. This many acres of wheat requiries so many days plowing; this will take a definite number of teams so many days; so many acres of orchard and vineyard to plow will require so many days.

Set down the number of work days and proportion off the horses for the work. Then before the time comes put every plow and harness in order and see that each horse has a well-fitting collar.

After the work starts, look over the schedule weekly anywhere the work falls behind. Catch it up the next week. Hire a team if necessary. Never allow the work to be two weeks behind. Rather abandon a piece completely; rather than attempt it do it half. The growing season is short and if it is lost, the money expended in planting is gone.

Have some system of checking up weekly. When made a definite business, ranching pays well in California. The owner must be master of the work and not a slave to it. He can be a master if he will study it rather than rush headlong to accomplish without any method in his business.

HORSE DOOMED AGAIN.

Edison claims he has solved the electric motor problem at last—solved it some time ago, in fact; but the material he found suitable for cheap and effective storage batteries—cobalt—was too scarce to be used commercially for the purpose. But by diligent search ample deposits have been found, and now a motor will be made so cheap that no other agency for moving vehicles of any kind will be used.

The horse is to become extinct, or nearly so. "In fifteen years," he says, "we will be paying 50 cents to see one in a side-show." If this last proposition proves true there will be one compensation, the draft stallion faker will be extinct. But don't begin to sacrifice the horse for a few months yet.

Oversour cream gives a sour and, of course, an abnormal taste to the butter.

A really good dairy cow will certainly not gain in flesh when in full flow of milk.

See Us for Sanitary Milk Bottles. O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

HANDLING VICIOUS HORSES.

A balky horse can be cured when under the saddle by a very simple method. Turn him around and around in his tracks a few times and then suddenly straighten his head and he will willingly and even gladly go forward. This was the method of the celebrated John S. Rarey, and has never been known to fail.

The jibbler differs from the balker inasmuch as his so-called vice is caused by congestion of the brain. The horse thus affected is liable to bolt or run away after one of these attacks, and is a dangerous animal. Rearing, although commonly termed a vice, is often caused by too severe a curb. Sometimes the rearing horse losses his balance and falls backward. It is needless to say that the rider is lucky if he or she escapes without serious if not fatal injury. When a horse rears loosen the reins and speak to him in a soothing tone, but if he persist give him a harp blow between the ears with the butt of the whip. This will bring him down on all fours with amazing quickness.

Kicking is certainly a vice. Sometimes, however, it is caused by fear, in which case much can be accomplished by gentle management. Exactly the opposite treatment of the rearing animal should be applied to the kicker. Hold his head up with might and main, for the horse can not throw out both legs at once when his head is elevated. Kicking straps are what the name implies. A strap fastened to the shafts over the horse's croup prevents kicking, but this is only serviceable when driven in single harness. Shying is a dangerous fault. It can not properly be termed a vice. It is generally the result of defective vision. Gentle treatment, soothing words and patient persistence in accustoming the animal to the dreaded object will often effect a cure. To lash a horse because he shies or is frightened only aggravates the evil. He will associate the punishment with the frightful object and will fear it more and more each time he encounters it—Country Life.

THE RUSSIAN THISTLE.

The Russian Thistle is a great soil robber. From the time the thorns are out, until ripe, the thistle takes up a large amount of sodium from the soil, and only small amounts of other materials. The thistle makes its heaviest draft upon the soil before the thorns are well out; after that it takes but little of the essential plant food. To prevent the heavy draft of the thistle upon the soil, it should be destroyed while young.

In the last stage of growth, the large amount of sodium taken from the soil is a benefit to strong alkali lands, but before this beneficial loss of sodium takes place, there is a serious loss of nitrogen, potash, and lime. An ordinary thistle of two pounds weight, covering a square yard, will take more potash and lime than two good crops of wheat from the same area. It will therefore be seen that in addition to its proving a serious menace to all branches of agriculture, by reason of its disagreeable character, it is one of the worst soil robbers we have and we should rejoice that we have a state law to compel farmers to exterminate it.

Milk clean—but do not "tug"—to keep up the milk flow.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fere Outfits See O. J. Weder Co., 555-557 So. Los Angeles St., Los Angeles.

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The Man or Woman Who Gets a U. S. Will Be Pleased

Paso Robles, Cal., Jan. 23, 1907.
I wish to state to you that after running one of your No. 6 Cream Separators for several months that I can recommend it to anyone as a thoroughly up-to-date machine in every particular.
From 10 cows I realized in 2 months $31.00 increase in profits over my old method.
I have not used any of the repairs yet that came with the machine.
I find it very easy to clean, and operate as I sit down to turn the crank while skimming.
The man or woman who gets a U. S. will be pleased.
Harry D. Draper.

U. S.
Won Blue Ribbon, California Mid-State Fair. Only One Awarded.

The Cleanest Skimming Separator.
The chief reason you want a separator is to get more cream—more money— out of your milk. The U. S. gets the most.

Holds World's Record
For Cleanest Skimming

The Simplest Separator.
Both in operating mechanism and bowl construction. Three gears and the bowl are all the "machinery" there is to the U. S.

A "Simple Bowl" Separator.
Only two strong, simple, easily-handled, easy-to-clean parts inside. Gets ALL the cream.

The Most Durable Separator.
Few parts and those strong and finely built of the best materials by skilled workmen.

The Easy Running Separator.
Gearing correctly proportioned, strong but not heavy, accurately fitted, has ball bearings, and runs in oil.

The Safest Separator.
Gearing all enclosed within the solid, low, one-piece, iron frame.

Our handsome free catalogue not only tells, but SHOWS, everything about the construction and operation of the U. S. 27 pictures. Please ask for No. 20.

PROMPT DELIVERY assured California customers from our San Francisco warehouse, ***No Delay***
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CARE OF MILK VESSELS.

In the first place I avoid buckets or cans which are put together with creases or solderings, with holes or cracks, which are difficult to clean. A simple one-piece pail is quite easy to clean and the most sanitary. The same is true of cans and other vessels. I avoid using cans after the tin has been broken off or sharp dents appear in the sides. It is almost impossible to clean them thoroughly at such places.

Proper washing consists in rinsing off with lukewarm water the milk sticking to the vessels, then washing with brush or rag and soapy water, finally thoroughly scalding with boiling water or steam and drying quickly. The first rinsing is very important, since if too cold or scalding water is used milk cannot be thoroughly removed from the vessels without considerable difficulty. Then a good brush is absolutely necessary to clean vessels, as a rag will seldom reach all parts of the surface. I have come to believe that steam is a necessity in the dairy, although in many cases boiling water will suffice if rightly used.

Where the vessels are steamed it should be done thoroughly and they must be wiped with a dry cloth and put upon a rack to dry while still warm. When scalded with boiling water be sure that no part of the surface is omitted, and the operation is performed inside and out.—Farm and Home.

For a Good, Practical Milking Machine see the O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

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A SHORT LIFE.

Here is the human biography in a nutshell: Born, welcomed, caressed, cried, fed, grew, amused, reared, examined, graduated, in love, engaged, married, quarreled, reconciled, suffered, deserted, sick, dead, mourned, buried and forgotten.

"I suppose you can remember when a lot of this land could have been bought for a song?"
"Yes," answered Farmer Corntossel. "But after seein' how much my daughter's singin' lessons cost that doesn't seem so cheap."

GOOD ENOUGH FOR THE COW.

Farmers as a class look upon the cow as a necessary evil. Dairymen as a rule look upon her as a money-making machine. Both expect her to turn out good products from any old thing that is "good enough for the cows." What they leave the hogs can have, and glad of the chance. How many, many persons are mistaken in this! Can you mention anything that brings in as good results as regards producing capacity of old Brindle?

It is wrong to feed a cow anything which you know is not pure and clean. She should have the best of feed, and also the best of water. Let it be cool in summer and warm in winter. A person never loses by giving good feed, care and attention to a cow. She enjoys a rubbing down with the brush as much as a horse does, and by so doing she becomes more gentle.

A cow knows her master. She shows what she thinks of him by his manner of approaching her. She may come to you with a gentle moo, expecting that little caress which she is so sure she will receive, or she may shy away to show her dislike.

Once a cow takes a dislike to either a boss or a milker, she will never recover from it; it makes no difference what you may do, that uneasiness will always be with her. When you go about the cows, whether it be in the stable, lot or pasture, be gentle and kind. Speak to them, pat them, talk to them. Never lose your temper, if possible, as no one will lose by it except yourself. When you have to reprimand the milker, never do it before milking. He may be ever so good a milker, a good worker, clean about his person and stables, yet the cows will know there is something wrong with him, and seem to do mean things which would be overlooked at any other time. We are all human, and a cow does not lack much of being human also. Treat her as a human and never give her anything to eat which is not good enough for yourself, if you were in her place. Learn this lesson, and never forget it. Be gentle, be kind.—Colmon's.

THE MILKING MACHINE.

From New Zealand comes the report of a new milking machine that is being installed in one of the dairies. The new machine does not follow the pulsating method at all, but milks by the pressure of air bags on the teats.

The process of milking is a silent one, and the milk is drawn thoroughly, according to witnesses of the operation of the new machine. It is planned to milk twelve cows at a time with this machine, and with it but little power is required. The owners of the new invention claim for it the following points:

As compared with all suction machines:

1. The teat is not congested by the unnatural action of vacuum as a milk extractor. Hence the cow "lets down" freely instead of resisting, and therefore (a) there is no need for hand stripping; (b) the cow is not "dried off," and (c) no harm whatever is done if the machine is left on longer than needed.

2. Cleanliness—the milk does not pass through rubber tubing.

As compared with all known attempts at non-suction machine:

1. Absolute softness of fluid pressure as contrasted with pressure of anything solid.

2. Absence of wheels, pistons or other mechanism in region of teat.

3. No harnessing around the cow's body is included in the attachment.

Warranted to give satisfaction.

GOMBAULT'S
CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a **HUMAN REMEDY** for **Rheumatism, Sprains, Sore Throat,** etc., it is invaluable.
Every bottle of **Caustic Balsam** sold is Warranted to give satisfaction. Price **$1.50** per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address
THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

For Sale, Jersey Bull
Two Years Old
Sire, St. Lambert of Westminster, 60438.
Dam, Woodstock Lyl, 125640. Address
W. J. Cole, Anaheim, Cal.
Parties wishing to see the animal can take Santa Ana electric and get off at Hansen station; walk one-half mile East.

For Sale Our Herd Bull Sargent Fox, 64833
As we have dispersed our herd, except a few heifers for home use, we are forced to offer for sale this valuable sire. We will sell him at a low price to a breeder who is in a position to give this bull a chance to make a record.
Leffingwell Rancho. Inc., Whittier, Cal

CATTLE MANGE.

Writing to his friends in Scotland, a manager of a large ranching company in the Alberta district says: "It would be extermely foolish to take off the embargo on Canadian cattle entering Britain, as the home cattle would soon get infected with mange. Although the cattle are compulsorily dipped twice a year, yet the disease is not cured— only kept back. There are," he explains, "two kinds of mange—the wet and the dry—the former being the worst, and incurable. When housed, cattle infected by the wet mange smell very bad, and soon rot and die." Even were the embargo removed, the ranchman, in the opinion of the writer of the letter, would benefit little and it might be his undoing altogether. Were mange to appear in the old country, Canadian fat cattle, as well as stores, would not be permitted to be landed at British ports, and were this to happen we might pack up our traps and clear out.

COLORING OF BUTTER.

In response to an inquiry by a dairyman on the butter-coloring question, the following reply was received from the chief of the United States Department of Agriculture, Bureau of Chemistry, which will interest dairymen generally:

"Replying to your letter of recent date, I beg to say that the coloring of butter is specifically permitted in the law of August 2, 1886. It is held by the department, therefore, that the food and drug act does not repeal the provisions of the act referred to above; that the addition of harmless color to butter may be practiced as therein provided; and that the presence of the coloring matter so employed is not required to be declared on the label.—F. & F.

Publishers' Department

MORE RECORD SMASHING.

WE ARE compelled once more to announce the smashing of all advertising records in the history of the Cutlivator.

The last issue, March 7th, contained seventy-five columns, and a little more. The subscriptions also continue to come in with gratifying frequency. This makes us feel particularly good, for two reasons; one being the additional prosperity which accrues to the Cultivator business department, and the other the indication of confidence on the part of our subscribers and advertisers.

THE LINERS.

WE INVITE especial attention to the unusual increase in liner advertising. On October 4th our liner department contained six different advertisements. On January 10th, it had jumped to eighteen different ads, and on March 7th the department showed forty different liner ads.

There is only one other department in the paper which shows so great an interest on the part of the readers, when it is well patronized, as does the liner advertising. We desire to make this department one of the strongest features of the paper, and would urge our readers to pay particular attention to these little business announcements. You will very often find exactly what you want offered for sale in these columns, in the line of bargains, which could not be advertised in the more expensive way, because the money transaction would be so small that the larger expense would not be warranted.

The attention of all of our subscribers and readers is also directed to the value of these liners in disposing of small quantities of anything which they may have to sell. The small price of one and one-quarter cents per word makes it possible to put in an advertisement costing twenty-five cents, which will help you to dispose of something which you have to sell, and also help somebody else to obtain just exactly what they want. We desire to make this department a medium of exchange between the readers of the Cultivator, and to that end solicit a trial from any one who has anything to sell, to exchange, or who desires to buy anything whatsoever.

THE LEGAL DEPARTMENT.

THE other department to which we refer is that of Queries and Replies. The extent to which this department has been made use by readers in the past, is a clear indication of its value, and we invite questions on all topics covered in all our departments from anybody who is a regular reader of the paper, or from those who desire to become such.

The new subdivision of the Query Department, which appeared for the first time March 7, has already proven its value, and the large number of questions on legal points which have been answered by Mr. Fall in the last issue, indicate that the people welcomed the opportunity to secure legal advise on small matters which are constantly coming up on the farm and ranch and in the poultry yard. Do not hesitate to send in your inquiries when there is anything of a legal nature that you wish to know. Of course, there are limits beyond which it would be impossible to go in answering questions, but you will always be sure of a courteous reply to any questions which you may send. Especially to the new-comers in California will this department be of value, as there are many points in which the laws of California differ from those of the eastern states.

SPECIAL LIVE STOCK EDITION.

AS HAS been previously announced, the Cultivator will issue a special edition devoted to the Live Stock and Dairying interests.

The date of this issue will be March 28th. We invite special inquiries to be answered in this issue, and also advertising.

The other departments will not be interfered with, but especial attention will be given to Live Stock and Dairying.

Advertising should be arranged for as soon as possible, in order to receive the best attention. Articles of special interest will appear, and we shall be glad to receive any communications, which would be proper for such an issue.

OUR VETERAN NURSERYMEN.

WHEN John Rock was alive he held the proud distinction of having been in the nursery business longer than any other man in California and used to banter his rivals a great deal about it in his merrier moods.

There were several who nearly rivaled Mr. Rock in the claim for pioneer glory, and next to him in the line stood Tim Carroll of Anaheim who started his nursery in 1868. The two were great friends and had the same open-hearted bluff way of dealing with all comers, which was characteristic of most of our early settlers.

John Rock has passed away, but Tim Carroll is still with us on the old place, as hearty and hale as ever, annually turning away trainloads of fine nursery stock which goes to beautify Southern California; especially such palms as Phoenix Canariensis and Washingtonia robusta, of which tens of thousands are planted each year. There is hardly a tree or plant in the nursery line that this large establishment cannot furnish, and the long experience of the proprietor has brought the stock up to the highest standard possible to attain. We feel that no one should buy ornamental stock without first corresponding with the Anaheim Evergreen Nurseries, the proprietor of which is now dean of California nurserymen.

White Wyandottes.

THE 1907 catalogue of the Capitol Avenue Poultry Farm is on our table. It contains thirty-two pages of business-like information about the prize-winning birds of this well known farm with a number of half-tone illustrations, and twenty or thirty letters from satisfied customers whose names are well known. Address, A. L. R. Mantz, R. F. D. 21, Box 98, San Jose, Cal.

Lady (to new milkman)—I hope I can rely on the purity of your milk. Mr. Smith's became two-thirds water.

Mr. Jones—You can rely on this, mum. It's been paralyzed by the public anarchist.

Separator News.

THE Springtime issue of The Separator News, the big semi-annual publication of The Sharples Separator Company, West Chester, Pa., is now being sent to readers.

The News consists of six pages, standard newspaper size, illustrated in colors, and is packed full of facts and information about Tubular separators and the dairy business—a big feature being the testimony of Tubular users.

The News circulation for the present issue is 600,000 copies, sent all over the United States wherever dairymen live, and the mailing out of which keeps a big force of people busily engaged for a month. A postal request addressed to The Sharples Separator Company, West Chester, Pa., will bring the News to the homes of those within the United States. Free.

Hen's Eggs Wanted.

We've always had the "pie habit"—now we're coming into the lime light as egg eaters. Each year eighty millions of hungry Yankees want more "hen fruit" than sufficed for the previous year. It's really getting to be quite a serious question how we're going to get 'em fried, poached, and scrambled in quantities sufficient to satisfy us. Supply doesn't seem to keep pace with demand—which fact accounts for the other fact—that lots of times we don't get any eggs at all.

Now if you travel about the country and keep your eyes open, you will be convinced that there are hens enough in sight to give every man his "two soft" seven mornings in the week, if each hen did her full duty. Which observation brings us right square to the point where the "screw is loose"—they don't do it—no fault of the hens either. The real trouble is, the hen-man doesn't know his business, or else he neglects it. He doesn't treat his hens in the way self-interest would seem to dictate. You can't expect a lot of hens confined in a closed house or yard, with no systematic or rational effort to supply what they would get in a natural state, to make a profit for the owner! Now if you are planning to make your whole living, or even your "pin money" out of hens, there are two or three things you should certainly remember. First, don't be satisfied wuth scrub hens. Second, (and here is the real point) don't attempt to keep them without giving a regular daily ration of a good tonic. Nothing in hen culture gives so large a return as this one thing, and the only tonic to use is Dr. Hess Poultry Pan-a-ce-a, prepared by Dr. Hess & Clark, of Ashland, Ohio, and sold by all dealers. This has been the experience of all successful poultrymen. This preparation is not a stimulant, like pepper or something of the kind that excites unnatural production for a time.

Dr. Hess Poultry Pan-a-ce-a does its work in a different way by assisting the hen to fully digest her food and send each element to its proper part in the hen economy. Thus a daily feed makes bone, flesh, feathers and eggs, each to the extent of proper elements in the food. Dr. Hess tells us that Poultry Pan-a-ce-a is a true scientific preparation. It is the result of painstaking experiment in his own yards. So certain are Dr. Hess and Clark of the wonderful value of Poultry Pan-a-ce-a and Instant Louse Killer, that they cheerfully give a written guarantee that it will do all they say. If it doesn't you get your money back. Considering cost of ingredients and and care taken in manufacture, these goods are remarkably cheap. It costs but a penny a day to feed 30 hens.

Worth $100 to a Utah Man.

Parowon, Utah.

The Lawrence-Williams Co., Cleveland.

My son-in-law used about half a bottle of GOMBAULT'S CAUSTIC BALSAM on his horse for curb, and he says it is a sure cure and no mistake. He says it has done him $100 worth of good. JOHN S. HYATT.

JUSTIFIABLE PROTESTS.

WE HAVE recently received several protests against statements contained in the advertisement of the Lindcove Realty Company, with a request that we publish same. We herewith publish two of them and also a letter from an experienced Portrville orchardist to whom we wrote for information.

The statement that orange orchards three years old will pay big profits, is based of course upon the theory and upon such terms that at the end of three years, the man who has bought the land can receive a big profit in the advance in land value.

The same explanation can possibly be made in regard to the statement that a ten-acre orange orchard will pay from $800 to $1000 net profit per year per acre. Most real estate advertisements put forth the strongest inducements, and make the strongest statements possible in their advertising, for the purpose of locating inquirers, and it is then only necessary for the inquirer to carefully examine his contract before purchasing.

It is possible for a real estate firm to sell real estate, which at the end of three years will pay big profits. But the man who expects to reap a big profit from a crop of oranges from an orchard three years old, will be very foolish indeed.

The company stoutly maintains that they can assure the profits claimed and we have no proofs to the contrary, so leave the matter with our readers to judge for themselves.

We expect reliability in the reports, opinions, advices and to a certain extent advertisements that get in the Cultivator. Such an advertisement as the Lindcove Realty Co. should not have a place in your paper.—C. P., Redlands.

I wish to take exception to the publication of such on outrageously misleading advertisement as appears on page 219 of the current issue of the Cultivator. To say the least the writer of that adv. has an unlimited credit at the Bank of Imagination and overdrafts are permitted.

In the first place, the first statement is not true. Orange groves 3 years old will not pay profits anywhere.

In the second place, any one who is persuaded to purchase orange groves of these people with the expectation of making "$800 to $1000 net profit per year per acre" will discover that instead of an orange grove they have been handed a lemon. In behalf of the uninitiated and of other advertisers who wish the high standard of the Cultivator continued, I protest against such rabid wanderings in advertising guise.—C. B., Redlands.

"Referring to your letter just received concerning the Lindcove property will say: A tract of that name has been laid out between Exeter and Lemon Cove. Such yields as the advertisement claims are unknown in this section. The average gross returns for an acre of oranges will be about as follows: At 7 years from planting, 2½ packed boxes per tree; average price $1.50 per box (this is high); 108 trees per acre. You will see that this gives a gross return of $405.00. This is clear of packing and selling expenses, but you must deduct: pruning and fertilizing, $25; cultivating and irrigating, $25; water, $10; picking and delivering, $21.50; interest on invested capital, $1000 per acre at 6 per cent., $60; total, $141.50. Leaving the net profit $263.50 per acre. Having been secretary of a packing association for six years continuously I claim that I ought to know some thing bout it.—Porterville.

Special Offer

JUST A WORD

ROSES

NOW IS THE TIME TO PLANT

In order to thoroughly place before the plant-growing public the undoubted superiority of our Montebello grown roses, we are offering all our finest varieties including the novelties, of last season in strong two-year-old plants at

$2.00 and $3.00

Per doz. according to size

PLANT NOW AND SAVE MONEY

All in fine dormant condition, and cost less than half the price of balled plants.

We Ship to Any Point

Our New **Catalog**

The finest ever issued in Southern California, to be had for the asking.

SEND FOR IT NOW

Howard & Smith

Mail Address: P. O. Box 848
City Depot: Ninth and Olive

LOS ANGELES, CAL.

Nurseries: Montebello, Cal.

Leonard Coates Nursery Co., Inc.

ROSES Splendid assortment, field grown, $2.00 per dozen.
CARNATIONS 5-inch Pots, field grown, $2 per doz.
A New Walnut. Eucalyptus, Acacias, California Privet, Etc. No Fruit Trees This Season.
CATALOGUE of strictly Pedigreed Fruit Trees, Etc., will be issued during 1907. Orders may be booked at any time.

Morgan Hill, Santa Clara County, Cal.

Our Specialties Washingtonia Robusta Palms, Phœnix Canariensis Palms, Grape Vines, Texas Umbrella Trees

Jurupa Nurseries

F. M. Borden, Prop'r Riverside, Cal.

White Brown **Leghorns** for full particulars. Finer than ever. Send for catalog.

Hemet Poultry Yards
Hemet, Cal.

The Ornamental Garden

By ERNEST BRAUNTON

WATER GARDENS.

THE simplest arrangement for growing aquatic plants is a collection of large tubs or half hogsheads located in a sunny position and partly filled with soil. A much better plan is to make a pool by excavating the ground two or three feet.

The walls should be made of brick, stone or concrete, and the bottom covered with concrete, using cement for all the work. There should be a waste-pipe at the bottom with a standpipe for overflow. In a basin eight or ten feet across quite a variety of plants may be grown, using wooden boxes or shallow tubs to hold the soil.

Those having fountain basins in their grounds can utilize them in the same manner. It is not necessary that there should be a continuous flow of water, but during the growing season enough should be run in each day to prevent stagnation and to keep the plants in health.

While most water lilies will flower freely in contracted quarters, they will attain greater perfection with much larger flowers if they have abundance of room both for the roots and the leaves.

Ponds twenty to thirty feet in diameter or even much larger are desirable for growing a good collection. In growing Nelumbiums in the same pond with Nymphaeas care must be taken to confine the roots of the former to a given space, as they have the habit of spreading in all directions.

Soil.

The majority of aquatic plants are gross feeders, and it is well nigh impossible to make the soil too rich for them. It is not necessary to go to a swamp or a natural pond to obtain what is suitable. It can be prepared upon your own premises.

Any soil which will grow good vegetables, will, if properly enriched, grow aquatics. A compost consisting of two-thirds good loam and one-third thoroughly decayed manure is what we recommend. If you have a black, friable loam which is intermediate between adobe and sandy loam it would be excellent for the purpose. Commercial fertilizers are often used with good results.

Poultry manure two years old in the proportion of one-sixth manure to five-sixths soil is excellent for Nymphaeas but should never be used for Nelumbiums.

Hardiness.

In the Eastern states aquatics are classified as "tender" and "hardy." The hardy varieties are of course equally suitable for cultivation in any part of the west as in the east.

There are some districts in California so highly favored in the matter of freedom from frost that the tomato plant and other tender vegetables may be successfully grown in winter.

In such localities tropical aquatics may be left out the entire year. But where a lower temperature is the rule, they should be taken from the pond in autumn and wintered under a glass-covered frame or in a warm greenhouse.

Planting.

Wooden boxes, varying in size according to the space available and the requirements of the plants, should be placed at intervals about the pond. Fill them with the prepared compost; then tread it with the feet.

After planting the roots, cover the soil with a layer of sand to keep the manure from rising. Boxes from 18 inches square to 3 feet square or more may be used.

For several years we have been using a liberal top-dressing of gypsum (land plaster) to our beds and boxes of lilies and lotus. It is applied to the surface of the soil after the annual overhauling of the pond in spring, and while it is empty of water.

It is used in addition to the other fertilizers and is beleved to have a beneficial effect upon the growth of the plants. Also to assist in keeping the water clear and free from green scum (confervae) during the summer.

If this confervae persists in appearing, an extremely weak solution of sulphate of copper may be applied to the water with a syringe.

SPIRIT OF BEAUTY.

"To those who are verily awakened to the great worlds of truth and beauty, the universe daily becomes a sublimer miracle. Not a summer cloud sleeps in the blue air, or unfolds its pure fullness, or melts in the distance, but they are dissolved in a luxury of contemplation and think of Him who spread above us the glory of cloudland wherever we are, and when all around us is tamely wearisome. Not a landscape lies dreaming in the sunshine, and slowly expands itself to the passing gaze, but they are intoxicated with a more fiery sense of beauty until their vision often swims with tears of gratitude for existence, and the heart is ready to break with weight of blessedness. Their souls overflow with the 'glory of the sum of things.' Every flower that looks up, and every star that looks down, smiles to them the smile of God; and every stream that dimples away, or thistle-seed that floats in the noontide, bears them onward to limitless seas of thought and joy."—Henry W. Parker.

THE FLOWER-GARDEN.

But the person may want a flower-garden. Very well; that is a different matter. It is not primarily a question of decoration of the yard, but of growing flowers for flowers' sake. It is not the furnishing of a house, but the collecting of interesting and beautiful furniture. The flower-garden, therefore, should be at one side of the residence or at the rear; for it is not allowable to spoil a good lawn even with flowers. The size of the garden and the things to be grown in it must be determined by the desire of the person and the amount of time and land at her disposal; but a good small garden is much more satisfactory than a poor large garden. Prepare the land thoroughly, fertilize it, resolve to take care of it, select the kind of plants you like; then go ahead.

Shoe Salesman—What a small foot you have!

Lady Customer—Yes, in trading for shoes I offer little to boot.

Water Lilies and Lotus The Most Complete Collection in the West. Catalogue Mailed Free

Edmund D. Sturtevant

Franklin Avenue, Between Crown and Western
Hollywood, Cal.

Morse seeds sprout..... You and nature do the rest

Seed

¶ Special offer—Collection No. 4

novelties and specialties from our new catalog

ONE PACKET EACH, of

Burgers Stringless Pole Beans	10c
New Baseball Cabbage	10c
Lettuce—Strawberry	10c
Pea—New British Wonder	10c
Eschscholtzia, Burbank's Crimson	10c
Sweet Pea, Countess Spencer	15c
Poppy, Shirley (Burbank's Strain)	10c
Heuchera, Christata (Burbank's)	10c
8 Packets (regular prices)	85c

ALL FOR **50c**

We are seed growers and dealers
Send the name of a friend to get a copy of our 1907 catalog

C C Morse & Co
171 CLAY STREET
SAN FRANCISCO

ROSES

Plant Now
Strong, Field-Grown Roses
56 Varieties
To Select From. ***Price, $2.50 to $3.50 per Dozen,*** according to size. Write for List—it's free.

Theodore Payne
Seedsman and Nurseryman
345 S. Main St., Los Angeles, Cal.

SEEDS

POULTRY SUPPLIES
STOCK FOODS
BEE SUPPLIES

Send For Our Catalogues

Chas. H. Lilly Co.
141 Spear St. San Francisco

THE VERNON NURSERY
4524 Central Avenue, Los Angeles, Cal.
A Good Stock of First-class Seedling Soft-shell Walnuts yet on hand.
Phone: South 1105 A. YARNELL, Prop.

S. W. Marshall & Son
NURSERYMEN
P O. Box 161 Fresno, Cal.
Commercial Smyrna Fig a Specialty

Guide to Gardening
In California — Sent Free for Asking
Chas. Winsel Wholesale and Retail
Agricultural and Vegetable SEEDS, BULBS, PLANTS, TREES
251 So. Main St., Los Angeles, Cal.

S.C. White Leghorn Eggs for hatching $5.00 per 100. Large birds. Good Laying Strain
Take Redondo car via Gardena to Strawberry Park
Stanley Senter, Gardena, Cal.

The Vegetable Garden

By ERNEST BRAUNTON

THE HOME GARDEN.

EVEN where the ornamental surroundings of the home have been neglected, a fairly well-kept garden in which are grown a number of the staple kinds of vegetables is generally to be found. In many cases the principal interest in the garden is manifested by the women of the household and much of the necessary care is given by them.

A small portion of the garden inclosure is generally devoted to the cultivation of flowers and a number of medicinal plants are invariably present. Throughout the newer parts of the country one finds that the conditions governing the maintenance and use of the vegetable garden are somewhat different, and, while a number of vegetable crops may be grown somewhere on the farm, there is wanting that distinction so characteristic of the typical New England kitchen garden.

It would be impossible to make an accurate estimate of the value of crops grown in the kitchen gardens of the United States, but from careful observation the statement can safely be made that a well-kept garden will yield a return ten to fifteen times greater than would the same area and location if devoted to general farm crops.

A half acre devoted to the various kinds of garden crops will easily supply a family with $100 worth of vegetables during the year, while the average return for farm crops is considerably less than one-tenth of this amount. A bountiful supply of vegetables close at hand where they can be secured at a few moments' notice is of even more importance than the mere money value.

Fresh vegetables from the home garden are not subjected to exposure on the markets or in transportation and are not liable to become infected in any way. Many of the products of the garden lose their characteristic flavor when not used within a few hours after gathering. By means of the home garden the production of the vegetable supply for the family is directly under control and in many cases is the only way whereby clean, fresh produce may be secured. The home vegetable garden is worthy of increased attention, and a greater number and variety of crops should be included in the garden.—W. R. Beattie.

SHIPPING VEGETABLES.

It is often profitable and at all times interesting to compare our own shipping methods with those of other sections, more especially those of similar climate. The following directions are taken from a bulletin published by the North Carolina Experiment Station:

"It is of the greatest importance that the products of the market garden should be put into an attractive shape for market. Green onions, beets and other crops that are sold in bunches should be properly washed and neatly tied in bunches with strings of raffia and packed in barrels.

Asparagus must be bunched in the regular buncher and the bunches made of the regulation size. Asparagus is shipped in flat crates just high enough to admit of the bunches being stood on end on a layer of damp moss and covered with another layer, the bunches being set in so closely that they cannot jostle and get out of place.

Cabbages are shipped in barrel crates with a partition in the middle. Beans and peas and lettuce in bushel baskets with a cover held tight with wire hooks. If lettuce is grown of fine quality under glass it will pay to ship in the Southern carriers holding about two dozen heads. These will sell in direct competition with the hothouse lettuce of the North, and will bring more money than lettuce grown under cloth and shipped in baskets or barrels.

A neat and attractive package always pays, and an honestly packed package will always tend to make a reputation for the grower, while a poorly culled sample and dishonest packing will always give the grower a bad name and a lower price for his articles. Never ship culls of any sort unless the market is very high and culls can be shipped as culls and pay.

Muskmelons are shipped in crates, and they, too, should be rigidly culled and no over-ripe or green specimens sent. The grower who always sends a good article, well-packed in neat packages, will always make better prices than the man who tries to work off an inferior article by hiding it in a package, surrounded by good specimens, for the only man he cheats will be himself with this last sort of packing. Always ship to a commission merchant who has made a reputation for fair dealing, and who has a good bank standing rather than an unknown party. While there are rogues in the commission business, there are honorable and responsible men, and these you should find out and stick to."

COLD FRAMES AND HOTBEDS.

The most common use of glass in the garden is in the construction of cold frames and hotbeds.

The difference between a cold frame and hotbed is that the cold frame is merely a frame to hold the glass sashes over a rich bed of soil, for the protection of some plants in winter and for the hardening off of tender plants that have been started in a hotbed or greenhouse.

The hotbed, on the other hand, is provided with some means of artificial heat, usually an excavation for holding a mass of fermenting manure, though sometimes a furnace is placed at one end and a fine run through a hot-air chamber under it, making what is known as a fire hotbed.

This last is but a poor compromise for a greenhouse, which can be built nearly as cheap, and is vastly better. In fact, the small, narrow greenhouse has now almost superseded the hotbed of any kind for all the purposes for which a hotbed can be used, being much more convenient and effective, even in a mild climate like California.

SEEDS PER ACRE.

The amount of seeds per acre is much the same in all climates, and for all time. That old veteran, Peter Henderson, after a life-long experience, recommended the following:

Beets, 5 to 6 lbs. per acre; snap beans, 2 bushels; cabbage, one ounce for 2000 plants; cucumbers, in hills, 2 to 3 lbs.; kale, 2 to 3 lbs.; watermelons, 4 to 5 lbs; onions, 5 to 6 lbs; onions, for sets, 30 lbs; onion sets, 6 to 12 bushels; peas, 2 bushels; potatoes, 10 to 12 bushels; radishes, 8 to 10 lbs.; spinach, 10 to 12 lbs.; tomatoes, one ounce for 1000 plants; turnips, 1 to 2 lbs.

Mrs. Barred Rox—Will the delegates from the Leghorn Society be allowed to vote in the Mothers' Congres?

Mrs. Brahma—Indeed, no! They are only lay members.

BORDEAUX POWDER.

Bordeaux Powder is now made for the vegetable garden by dissolving 10 pounds of sulphate of copper in four gallons of hot water, adding to this a solution of five pounds of lime to four gallons of water. Stir this till no green streaks appear and scatter it into the lime dust made by slacking the balance of a barrel of lime. Mix with a rake, sift and spread out to dry. This makes about 250 pounds of powder.

When writing advertisers mention Cultivator

SEEDS

If you are in need of fresh and reliable seeds, of VEGETABLE, FLOWER or FIELD, and PLANTS on which you can depend, it will be to your advantage to send for our **New Catalogue.** Mailed free on application. **Sevin, Vincent & Co., 621** Sansome Street, San Francisco, Cal. In ordering please refer to Adt. in Cultivator

GRAPE VINES

Pierce Isabella Table Grapes; 1200 two-year old and 400 one year old; fine rooted vines. Write for prices.

Barbour Ranch San Gabriel, Cal.

LOGANBERRY PLANTS

Per 100 $1.75
Per 1000 $13.00
F. O. B. Long Beach.

H. H. Hart, Long Beach, Cal.

SEED

OF THE BEST QUALITY PLANTS AND BULBS

THE NEW SEED STORE

Everything Fresh and of highest Quality.
SEND FOR CATALOGUE

Morris & Snow
555 SOUTH MAIN ST.
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Charles C. Navlet Co.'s New and Wonderful

Seedless Blackberry

The Handsomest, Finest Flavored, Earliest Ripening and Most Profitable Blackberry in the World

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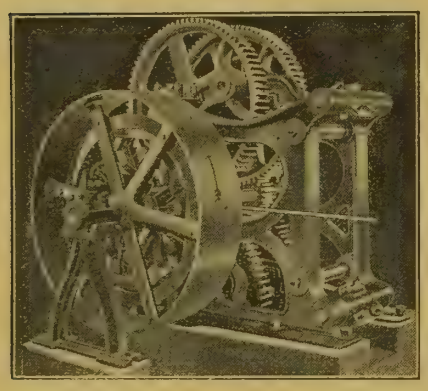

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DUTY OF WATER.

THE soil on the Twin Falls tract is commonly considered to be of volcanic origin, varying from two feet to an unknown depth, consisting of very fine particles.

When we began work on the Twin Falls experimental farm in 1905, we dug prospect holes from seven to ten feet in depth in order to determine the character of the soil, and the amount of moisture present.

The only difference we observed in the soil was that the first foot was somewhat darker in color. With regard to moisture, the first eighteen inches contained some moisture, but below it was perfectly dry, consequently we irrigated before planting. It required twenty-four to thirty-six hours to saturate to a depth varying from seven to ten feet.

No effort was made to determine the quantity of water used during the season after that. This year (1906) it was determined to measure the amount of water used on the farm, and the amount running off as waste, as well as the evaporation, with a view to determining the quantity of water necessary to keep the soil in proper condition.

The miners' inch was used in measuring half a cubic foot per second of the farm, and a device was employed in connection to obviate any fluctuation in the head. A weir with an automatic register attached was used as a check on the miners' inch measurement in order that we might be sure that just the amount of water desired was supplied.

At the lower end of the farm a weir register was installed for measuring the waste. Elias Nelson of the Bureau of Irrigation and Drainage Investigation added an evaporating tank.

We began irrigating May 2, with the amount of water allowed under the contract between the settlers and the Twin Falls Land and Water company—that is 1.80 of a cubic foot per second per acre, continuous flow.

The amount of water applied during each month up to the first of September, 1906, is given below, as well as the waste and evaporation:

Total amount applied, 36.10 inches; total percentage, 100 plus.

Total amount precipitation, 0; total percentage, 12.4.

Total amount wasted, 4.49; total percentage, 7.4.

Total amount evaporated, 28.06 total percentage, 77.7.

Total per cent. wasted, 7.4.

Total per cent. evaporated, 77.7

Total difference (or water retained by the soil), 5.694 inches; 15.8 per cent.

The waste during the month of July was was greater than any other month. This occurred while we were irrigating the lower tier of plats, and no opportunity was afforded whereby we could again use the waste. The farm consists of 40 acres, and being an experimental farm, there are a great many different crops grown, requiring water at different times and in varying quantities.

The evaporation almost equaled the amount of water applied during this month, less the waste and evaporation as shown by the evaporating tank.

Assuming that the evaporation from the water-free surface in the tank was equal to the amount evaporated from the ground, plus the amount used by the crops, we can have some idea of the amount of water actually required.

No doubt if less water had been applied, the results, as far as the crop production is concerned, would have been the same or greater, as was indicated by some tests made by Mr. Nelson, showing that the third foot of soil lost much less moisture in a given time than the first or second foot. The roots of certain crops penetrate to a depth where they would be able to draw upon the moisture to a greater depth than the shallow rooted ones.

If all the crops grown had been of the kind that could have been cultivated, thus conserving the moisture, I am sure much less water would have been required.

Taking the four months, or 122 days as the irrigating season, we used water twenty-four days nine hours in May, twenty-six days in June, twenty-two days and nine hours, in July, and twenty-three days and two hours in August, leaving twenty-six and a half days during the irrigating season when water was not used.

These results show that 1-80 of a cubic foot per second continuous flow is more than necessary at Twin Falls, where the soil is very deep.

I believe if the land were given a thorough irrigation late in the fall, thus storing the moisture in the soil for use the following year, it would be a great saving of time and labor, and materially lessen the amount of water used during the irrigating season, besides being more economical, and as the surrounding areas become moistened through irrigation, with proper cultural methods, less and less water will be necessary each year until half the amount used this year will be sufficient.

Just what the duty of water will be on the Twin Falls tract a few years hence, I am unable to say, but I believe that it will be far greater than now, as the people are becoming educated in the use of water, and find that less water and more attention to the soil give greater and more, beneficial results. This fact was demonstrated this year on a portion of the experiment farm, where last fall it was irrigated late, and only one irrigation was required this season to produce 70 bushels of wheat to the acre and 96 bushels of oats.

The character of the soil and the lay of the land should indicate the best method of applying water.

Two methods have been tried on the Twin Falls tract—flooding, and by furrows or corrugations. After a thorough trial, the corrugation method has been given the preference, and fully 90 per cent. of the farmers have adopted this method.

I believe that it is the better of the two, especially when annual crops are grown, such as grain, etc. While it is true that some others claim that the duty of water is greater by flooding than by corrugation, that has not been by experience in the portion of the arid district where I am located.

As it is understood that water only goes into the soil under pressure, and that plants practically stop growing when the air is excluded, which is done by flooding, this is objectionable.

Then again we understand that plants only use the ascending or capil-

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ary moisture, consequently the ideal way of applying water is to do so without shutting off the air, or causing the soil to bake, which is the result more or less if flooding is followed in this section.

This is especially true of nearly all crops excepting grasses. Then again, water is more easily applied by the corrugation method than by flooding, and if the corrugation system is properly constructed, water can be applied so that it will run night and day with less labor or care, and with comparatively none, if any, damage to the land.

I consider the corrugation method the best for applying water, at least on this tract, or any other tract having the same conditions.

I will try to describe the system I have advocated to the farmers on this tract, the great portion of whom have followed the advice given:

First, the land is graded, so that the water will not be turned from its course in the corrugations by the high places. It is not necessary to have a perfect outline, but there should always, necessarily, be fall enough so it will continue on its course.

We then run the corrugations or small furrows two feet apart in the direction in which the water is intended to flow. Cross ditches are then run at right angles with the corrugations from 300 to 500 feet apart, according to the grade or fall of the land. Check boxes are put in each cross ditch, the distance apart being governed by the fall of the land. The sharper the pitch, the more check will be necessary. The nearer level the supply ditch is, the less boxes will be required, and within a reasonable limit, will carry sufficient water to irrigate the land intended.

Check boxes are so constructed that the water will flow over and not under the splash boards. The water is raised by these splash boards as high as needed, so that the water between the check boxes, when raised to full height, will stand on a level, the excess water being allowed to go over the splash boards, and be caught up by another check box.

To divert the water from the cross ditches into the corrugations lath boxes are used—each of these boxes will supply from one to three corrugations, depending upon the pressure in the cross ditch and the length of the corrugations.

Four laths will make two or three boxes, according to the length required. The laths are simply nailed together in the form of a square, and cut into two or three sections, as the case may require. The boxes are then placed in the bank of the ditch, the top of the lath box being a little below the level line of water, so all will receive the same pressure, and flow steadily night and day. If they are kept clear, they will remain in position for service indefinitely.

Three thousand laths will make enough boxes to furnish one for each corrugation on a 40-acre field, the field being cut into three sections.

Boxes in the head ditch for the section below control the drain water from the section above, so that all drain water is picked up and redistributed further on down the field.

When check boxes and lath boxes are set in place, the land being properly graded, irrigation is no longer a task. Under this system, with a regular head of water, irrigation becomes automatic

The condition of the soil on the Twin Falls tract is such that it takes about 12 hours to properly irrigate a field in each section, as above indicated. On many so arranged farms, irrigation is looked after twice a day—in the morning before work commences, and in the evening after work is over.

It can readily be seen that irrigation under the above system is not a task, but in reality a pleasure. When flooding is practiced, especially on new land, the water is hard to control, the cost of labor is increased, and damage to the land from water is probable.

Moreover, it is dangerous to attempt flooding at night. By the corrugation method, water can be applied night as well as day with perfect safety.

Besides, under the corrugation method, there are no pools formed in low spots—the land receives water uniformly, in the way and manner desired.—Alex McPherson, Twin Falls, Idaho.

The English Walnut in the North

Continued from page 267

cription of this nut, states: "It is very large, with a light colored shell of moderate thickness, kernel plump, readily extracted whole, sweet and rich nutty flavor. Tree blooms late and is very productive. An old and standard French variety." At the present time we have very few genuine Mayette trees in bearing in our state.

Parisienne.

Named after the city of Paris, but was originated in southern France and is now quite extensively grown in that country, and, with Mayette and Franquette, forms the bulk of the crop. It is a large nut of about the same size and proportions as Mayette but is more truncated at apex and does not bulge out as much in the center. It is sometimes slightly ribbed, and the pits, while numerous, are shallow. The valves are not pronounced. The kernel separates very easily from the shell. The pellicle is very light—from a straw color to nearly white.

The convolutions are much as in Franquette and veins are quite pronounced. The kernel is smaller than that of either of the aforesaid nuts. In quality it is very good. Those who have seen this nut in the Prince orchard at Dundee are very much impressed with it, although Mr. Prince himself is as yet not quite sure that it can rank with Mayette and Franquette. These three nuts are promising from a commercial standpoint.

Chaberte.

Named after its originator. A medium sized nut, very flat at the base, and at the apex pointed in much the same way as the Franquette. The shell is thin, often to such a degree that it will not stand shipping in sacks, but must be crated. The kernel is smaller than that of the three above described nuts, but of about the same color as that of Mayette.

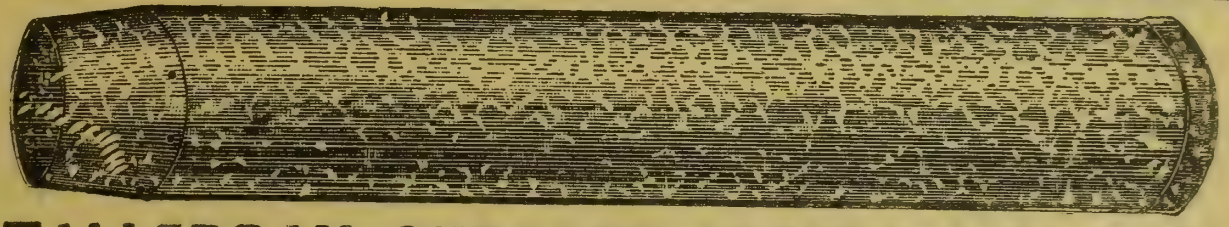
It separates very easily from the shell, and this fact, with the small size of the kernel, makes it a favorite with confectioners. In quality, the meat is rich-flavored and oily. Because of the large percentage of oil, it often is grown for this purpose. It is the hardiest of our French varieties and has grown at an elevation of twenty-seven hundred feet. It will also thrive on poorer soil than most of the other varieties.

Proepurturien.

Named because of its precociousness. The nut ranges in size from medium to small. In form it is something like a small Franquette, without the pronounced valves. It is a vigorous dwarf variety, often bearing in the third year, but only the grafted trees keep these characteristics. The seedlings tend to revert to the larger, less precocious, tree. In quality it is very fine and makes an excellent home nut, It is free from disease and is productive. Mr. Felix Gillet has introduced two improved strains, namely, the Large Pointed, and the Late, Proepurturien.

Meylan.

A French variety that originated near the village of Meylan and is quite extensively grown in that region. This is a large nut, flatter and slightly broader than Mayette. The pits on the shell, however, are not so pronounced. Quite recently introduced into America by Felix Gillet. This nut can be seen growing in the orchard owned by Mr. Prince and is a very promising nut, being smooth and of a fine form. It is somewhat lighter in color than most nuts.



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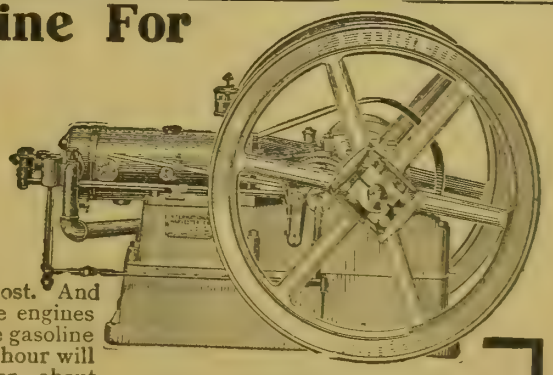

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CAR SHORTAGE.

Answering the criticisms relative to car shortage in California the Southern Pacific states the present condition from its point of view. Some of the declarations made are as follows: At the present time the Southern Pacific has several thousand cars in Oakland and San Francisco which it is doing its utmost to get unloaded. When fifteen to twenty per cent. of the rolling stock of a railroad is tied up at one point famine elsewhere occurs.

Extreme measures have been taken to relieve the situation and it is thought with the rapidly improving warehouse facilities in the city and the better conditions for teaming that within a short time the trouble will be a thing of the past.

The criticism that there has been great congestions in yards and on mail lines, because the track room was not sufficient to care for the increased business, is answered by the statement of the S. P.: "that 7000 locomotives were built in 1906 compared with an average of 4300 during the preceding five years. During 1906 nearly 241,000 cars were placed at the disposal of the Southern Pacific and other railroads in the country. During the same period the Southern Pacific has increased its trackage 1100 miles, or thirty per cent. over the total for 1905."

While these explanations extenuate the Southern Pacific, they do not relieve the car shortage which is costing the shippers an immense sum of money. It is estimated that over 4000 cars of oranges are going to decay in Southern California today. The Southern Pacific is not alone in its shortage, the same state of affairs exists on the other lines, and the question is what can be done to relieve the situation. Apparently we are increasing our producers faster than the railroads can take care of our product. The only solution to the problem of transportation seems to be a government transcontinental railroad to be operated more as a freight carrier line than for passenger traffic.

CALIFORNIA STATE FAIR.

Prof. Wickson writing of the State Fair for 1907 says:

"The next California State Fair promises to be great. It will be held from September 7 to 14. It is expected that the Executive Committee of the National Irrigation Congress will fix the date of the meeting of that congress, in Sacramento, the same week as the State Fair. With these several thousand delegates from all parts of the United States, the inducement to display products by way of showing to the visitors what California can do, will be very great. President Roosevelt is expected to come West to visit and inspect the Roosevelt dam in Arizona, and will be invited and urged both by the Irrigation Congress and the State Fair officials, to extend his trip into California and visit the State Fair. All this looks very promising for the popularization of the project, now what will the farmers and stockmen do to make it not only spectacular but agricultural? That is a very important question, which all individuals and associations in the agricultural line should take up seriously."

If the management of the State Fair will get busy and do its part, at the same time see to it that a square deal is given all exhibitors, from hotel accomodations to transportation on the railroad, the greatest fair in the history of the state will come off. Prospects for a wonderful prosperous year are in evidence and the farmers will be in splendid shape to make exhibits and to attend the fair.

SUGAR AS FOOD.

With the changes which have come from experiments with different articles of diet sugar has taken a strong advance. A few years ago there was a wide-spread conviction that sugar is not a healthy addition to dietary, but from modern investigation this idea has well nigh became obsolete. It has been shown that used with moderation sugar forms one of the most wholesome articles in table use. The governments of Europe, as well as our own government have added sugar to the rations of their armies, and the results of several years use have placed it among the highest articles in the daily rations of soldiers. It has been shown from experiments that pure candy is healthful for children when not used to excess and fits in with fruits exceedingly well in all stages of child activity. The Minnesota Exepriment Station has issued a bulletin on the subject. Among other things the bulletin recites: "In the dietary, sugar is frequently regarded as a condiment instead of a nutrient, to be used for imparting palatability, rather than for purposes of nutrition. While sugar is valuable for improving the taste of foods, its main worth is as nutritrive substance. From the caloric determinations of the foods used, of the feces, and of the unoxidized products of the urine, it is estimated that 98.9 per cent. of the sugar was oxidized and made available to the body. Thus, for all practical purposes, sugar may be regarded as entirely digested. Being composed of the elements carbon, hydrogen and oxygen, it forms when burned or oxidized carbon dioxide and water and as a result heat is liberated. The sugar used in these experiments when burned in the calorimeter, yielded 3.995 calories or heat units per gram, or approximately 1.800 calories per pound, which is about the fuel value of starch and allied carbohydrates. As a heat and energy producing nutrient is fully equal to starch, and is more readily absorbed by the body."

Sorghum has proven a valuable adjunct to cattle feeding and in Texas is now generally used in the finishing of stock for the market. The meat of beef cattle fed on sorghum is sweeter, more nutritious and less fibrous, than the meat of cattle finished entirely on grain. For this reason feeders in the South, and even in Kansas and Oklahoma are using molasses to a much greater extent that in former years. From present indications the human family and the animal kingdom will be fed sugar a great deal more plentifully in the future than in the past.

COBURN OF KANSAS.

Second only to Secretary of Agriculture, James Wilson, of Iowa, in the estimation of the farmers of the United States, stands F. D. Coburn of Kansas, who from his long and successful career as an agriculturalist has been denominated "the farmers' friend."

Probably no man in public life has written a greater variety of bulletins and books on farm topics, not exerted a wider and more beneficial influence on the people of his time who are interested in scientific farming, than the secretary of the state board of agriculture of the great commonwealth of Kansas. His writings have became authority so far as they pertain to Middle West conditions to every agricultural college and newspaper in the Middle West territory.

Not long ago the governor of Kansas tendered him the appointment of United States Senator to fill the place made vacant by the removal of Burton. This honor was declined because Mr. Coburn said he could better serve his state in his present capacity than in the Senate of the United States. Since 1880 he has, with but short interim, been Secretary of the Board of Agriculture of his adopted state, and it is probable that Kansas has received more wide-spread advertising through his efforts than any state in the Union. His writings have attracted thousands upon thousands of enterprising farmers to his state and the helpful suggestions he has given them have had much to do in placing Kansas in the front rank of western states.

To sum up the subject of this brief editorial it may be said, Coburn, of Kansas, is a great big man. Capable of filling any position anywhere.

When James Wilson leaves the cabinet of the President, no better man in the entire country can be found to succeed to his portfolio, nor one who would so well please the masses as of the farmers throughout the country as, Coburn of Kansas.

CONVICT ROAD MAKERS.

A suggestion has been made that our criminals be used as road makers. Instead of housing them in jails and feeding them until their sentences are served, put them on the public highways and let them work out their fines.

There are some reasons why this idea might be followed to advantage. The average criminal would be better off if he were put to work than he would be if allowed to lay in jail. It would cost a little more to guard him, but he would be paying for his keeping in a substantial manner. Several states are looking into this subject and convict labor, both from the penitentiary and the common jail, is being advocated for road making. Supervisors in California counties may find suggestions of value in the idea, not only as a remedy for keeping out the vagrant class, but improving his physical and moral condition by giving him some strenuous labor in doing service to the state.

CALIFORNIA STOCK.

The February Crop Reporter states that on January 1, 1907, there were 391.680 horses in California, valued at $36,120,721, or $92 per head. Mules 80,750 valued at $8,599,875 or $106 per head. Milch cows 405,615 valued at $14,196,560. Other cattle 1,167,107 valued at $21,474,767. Sheep 2,422,426 valued at $8,006,170 or $3.31 per head. Swine 550,581 valued at $3,909,125 or $7.10 per head.

Better packing of oranges and other fruit for export would greatly help American trade, according to the reports of various consuls in Europe. One consul makes an excellent suggestion as to packing apples in boxes instead of barrels. It would save the oranges from damage which cannot well be avoided when they are packed in barrels.

The Cultivator trusts the delegation in Congress from California wil do everything possible to further the National Grange road bill. The farmers need it. California as a State needs better roads—vastly better roads. Stand together, for this bill and let our representatives see we are a unit for it.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

Chino has had two feet of rainfall.

Highland's rainfall to date is 21.71 inches.

Rainfall at Hemet far measures 14.69 inches.

Total rainfall to date at Pomona is 25.25; total fall for season ending June 30, 1906, 23.33.

Farmer's Institutes will be held in Ventura, Fillmore and Pomona late in May or early in June.

For the last storm the precipitation at Redlands was .71 of an inch. This makes 19.04 inches for the season.

The rains of the past three weeks have almost completely destroyed the Moorpark apricot crop about San Jose.

The express shipments for the week from Escondido were 241 cases of eggs, 1700 pounds of poultry, 600 pounds of butter and 1980 of cream.

The rainfall resulting from the last storm was 2.72 inches at Ontario which brings the total for the season up to 21.76.

The precipitation of the late storm amounted to 1.25 inches, making a total of 14.95, as against 10.80 for last season to date, for Escondido.

February was a short month, but in spite of that fact the output of the Imperial creamery showed a growth of 25 per cent. during the month.

More than 700 acres of land, good farm land at that, has been sold in the Santa Maria Valley to home-seekers since the first of the year.

The heavy rainfalls have caused Lake Hemet to overflow the Hemet Dam, and in consequence over 5000 miner's inches of water are going to waste.

The packing-houses are hard at work with the oranges, but owing the car shortage, shipping is slow. Several carloads are ready for the cars when they arrive.

Tomatoes are to vie with potatoes in the Yuma valley this year. Scarcely a ranch is without a small plot of ground in which tomato seeds have been planted and small plants grown.

Twenty-five hundred acres of beets for the Chino factory are already planted, of which 350 are on the Chino ranch. They are coming up nicely and within a fortnight thinning will begin.

For the first time in years, the Covina packing-houses are running full blast on Sunday, as the ranchers are anxious to take advantage of the excellent prices now in the eastern markets.

On account of the heavy rains during the past week the orange shipments have been somewhat retarded at all points. On an average of twenty cars a day have been removed from the Covina packing-houses on fine days.

"George," she said, "before we were married you were always giving me presents. Why don't you ever bring me anything now?"

"My dear," replied George, "did you ever hear of a fisherman giving bait to a fish he had caught?" Then the kettle boiled over.

HORTICULTURE.

The rainfall at Poway this month to date is 1.13 inches, making 13.69 inches for the season.

Rainfall up to Tuesday night, 3 inches, making a total of 23½ inches for the season at Fillmore.

Mr. Sherman Stevens has been setting out 25,000 orange trees for a nursery stock on his place in Tustin.

So far this season, or from the first of December there has been in all 141 cars of fruit shipped from Rialto.

The car shortage crippled the shippers at Ontario considerably, the fruit being on hand for at least 300 cars.

The season's rainfall at Ventura now amounts to 24.31 inches. To the same date last season 10.97 inches had fallen.

The rainfall for the last storm at San Bernardino is 2.32 inches. This makes the total rainfall for the season 20.39 inches.

The total shipment of citrus fruits from Highlands, East Highlands, West Highlands and Patton to date amount to 686 cars.

The Tustin Packing Company is still shipping about a car a day. They have sent out two cars of lemons and the rest are seedling oranges.

Stone Brothers have placed an order for 800 Bartlett pear trees which they will plant on the border of their farm in the Mesquite lake district.

March shipping at Ontario will be crowded to the limit and 450 cars must be shipped in order to properly care for the immense crop of oranges.

Wide awake apple growers about San Bernardino are making preparations for fighting the codling moth by putting their spraying apparatus in order.

A few of San Bernardino's deciduous orchards used smudges on the late frosty nights. Examination shows that there was little or no damage done.

The Citrus Fruit Association at Ontario shipped in February seventy-five cars of oranges, while the shipment for the whole colony amounted to 200 carloads.

Total shipments from Ontario of oranges and lemons for the whole season is estimated at 2000 carloads, being an increase of 600 cars over last season's output.

The Rialto trustees have secured 2000 eucalyptus trees to set out on the new school premises. The plan is to set four rows along the north side and two rows on the west side. These will not only protect but will at the same time be useful for fuel.

OPPORTUNITY.

They do me wrong who say I come no more
When once I knock and fail to find you in;
For every day I stand outside your door,
And bid you wake, and rise to fight and win.

Under present conditions the most profitable dairy cow seems to be the one that helps make the most butter in winter.

Northern California

AGRICULTURE.

Salinas has a 3-legged colt in good healthy condition.

The tule land in the vicinity of Rio Vista and Isleton is rapidly coming to the front as an early asparagus district.

The last rain at Redding makes the season record 28.06 inches. At even date last year the record showed 22.37 inches.

Two crates of asparagus from Isleton shipped to Philadelphia last week sold for $25 each, the crates weighing twenty-four pounds each.

The American Beet Sugar company announces the attractive feature for the coming season of a bonus of 25 cents a day for all who remain with it during the season.

Manager Nash of Winters is preparing to set out 75,000 tomato plants on the cannery grounds and will later transplant them to a 100-acre tract, the cannery has rented on the T. A. Sparks ranch.

The land of William J. Kaseberg, facing the county road to Pleasant Grove for a distance of three miles, will be sub-divided into forty-acre tracts and sold to small farmers.

Application was recently made to the Department of the Interior on behalf of the Sisson section asking that a portion of the water supply of the middle and south forks of the Sacramento river and Panther creek be utilized in the irrigation of about 10,000 acres of land in this vicinity.

Causes of Bitter Milk.

The question is often asked, says a writer in Successful Farming, "What makes milk and cream get butter in cold weather without getting sour?" And having asked the question, makes the following answer: Milk or cream at very low temperatures will sometimes become so bitter it is unfit for use. Though you have put it in cold water at once and reduced the temperature, and though it may have frozen later, yet you are troubled week after week with bitter milk and cream.

All troubles in milk, except those due directly to bad flavors received from filth or absorbing bad odors, are due to some form of bacteria. If there were no bacteria in milk it would keep indefinitely. There are certain kinds of bacteria that multiply by spores. Whenever that occurs the bacteria are hard to get rid of. Spores are to bacteria as seeds are to cockle burrs. It isn't a hard matter to kill the weed, but the seeds may live for years in the field before they get a favorable chance to sprout, thus the almost endless task of eradicating them. Bacteria are minute plants. Those that multiply by spores (seeds) are easily killed, but the spores live through severe conditions and grow as soon as conditions are favorable. Thus the trouble is hard to get rid of.

Bitter milk bacteria can be killed by ordinary scalding of cans and pails, but the cans must be given a very thorough washing with washing powder and brush, then sterlized with much boiling water or steam in order to kill the spores to the trouble will not start up again.

Freezing does not stop the growth of this bacteria, though it does stop milk souring bacteria from multiplying, hence your milk and cream becomes very bitter in cold weather and not get sour. Absolute cleanliness is the remedy.

HORTICULTURE.

The olive crop at Fair Oaks this season was a good one.

Total rainfall to date at Vacaville, 19.91; rainfall at same date last year, 19.11.

The rainfall to date at San Jose is 15.52 inches, against 9.40 to the same date last year.

Prunes are not yet out in blossom in the Santa Clara valley, except here and there in occasional orchards.

The owner of the nicest grove in the town of Colusa, says that this season's crop nets him between $700 and $800 an acre.

A great many people in California are unaware of the fact that Colusa county produces such excellent oranges, and yet it is a fact.

A small orange grove near Colusa was recently sold at over $500 an acre, while the same soil nearby but unimproved can still be had at around $100 an acre.

The building of a winery near Roseville has greatly stimulated the planting of wine grapes, and it is expected that a large acreage will be set to grapes.

The last rain storm at Saticoy measured 1 1-4 inches, which makes a total for the season of 24 inches, against 3¼ inches for the same date last season.

The attention of all pear growers is again called to the pear blight and the fact that all "hold-over" must be cut cut before the leaf-buds open and the flower-buds bloom.

A new industry of the Santa Clara valley is to be established this coming season, when pitted prunes will be one of the features placed on the market by local packers.

The heavy downpour in the Santa Clara valley ended what chances there were remaining of a fair apricot crop, as the trees were in blossom and the rain destroys the pollen.

For the present storm up to 7 o'clock .91 of an inch of rain had fallen at Watsonville making a total of 29.68 inches for the season. The prospects are for more showers tonight.

Announcement has been made that more of the Kaseberg estate near Roseville will be placed on the market as soon as surveyed. The estate consisted of 28,000 acres of fine grain and fruit land.

The pear growers of Green Valley feel jubilant over the present condition of the pear orchards, as very little blight is in evidence this year and the trees present a much healthier appearance than they have done for the past two seasons.

The Vacaville district has furnished the following fruits for the last season: Prunes, 4000 tons; Peaches, 800 tons; Ruby Prunes, 300 tons; Figs, 200 tons; Pears, 100 tons; Pitted fruits, 100 tons; Total, 5,500 tons. Averaging twenty tons to a car this would amount to 275 carloads.

A poor cow can be made to pay her way at least by liberal feeding. It is equally true that a good cow may be made to lose by "stingy" treatment.

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

Buy the World's Famous Egg Food No. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hasard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and breed. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for greatest batch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be isued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. FILCHER, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

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S. C. White Leghorn Eggs

For Hatching, from Captain Mitchell's Strain.
Large Birds. Prolific Layers. Large White Eggs.
Order Books Open for 1907 Season.

The Lincoln Avenue Poultry Yards

Carl C. Curtis, Owner, Pasadena, Cal.
Successor to Captain E. Pryce Mitchell
Lincoln Ave. and Ventura St.—Altadena Cars

Excelsior Mills

Excelsior Chick Food

Excelsior chick food is a perfectly balanced ration for your growing chicks. Will raise the largest possible per cent. of your baby chicks. All pure food, no shriveled grain and filler used in its manufacture. Absolutely clean and free from dust. No waste.

The Best Food on the Market

Ask for Excelsior. If your dealer cannot supply you write us. Circular free if you mention the Cultivator.

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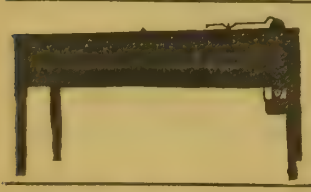


For a **Practical Pointer** in **Poultry Profits** use the **Principal**

They Are the Best on Earth
Principal Incubator Co., Graton, Cal.
Send for New Price List

Best Incubator

On the Coast—best anywhere. Made right—prices right. Guaranteed. Catalogue free. Also great **Combination Brooder.** It is great—both indoors and out. When the chicks are hatched feed them the celebrated

West Coast Chick Feed

A rightly balanced ration for the little ones. Manufactured by

West Coast Stock Food Company
818 San Fernando St., Los Angeles, Cal.

When writing advertisers, mention Cultivator.

Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

WOMAN'S WORK.

"MAN'S work is from sun to sun, woman's work is never done" was the rejoinder to the question, "Whatever were you doing in the middle of the night?

"Mother heard a chicken cry, and knew something was the matter, so she went out to put it to bed again; they sometimes tumble out and get lost, especially on moonlight nights."

"You don't mean to say that you got out of your warm bed and went out to the brooder house in the middle of the night, just to make a chicken comfortable?" said my Eastern friend in a tone of mournful surprise. I could see she looked upon me as a hopeless case; in fact pitifully weak in the upper story or a monomaniac as far as chickens were concerned.

"That is just what I did," was my laughing reply. "Of course no one likes to hear a chicken or a baby cry, especially in the middle of the night, but it was not merely a matter of sentiment on my part; it was also a matter of dollars and cents."

"How much is that chicken worth?" was the next question.

"About fifty cents; it is a thoroughbred White Rock."

"I fail to see where your dollars come in; it seems to me you are carrying things too far!"

"Wait till you are a chicken fancier, then you will understand!"

When She is a Chicken Fancier.

When she is a chicken fancier, she will know that if I had left that baby chick out from under the warm hover, he would have taken cold and next day would have been feverish and walked around all humped up alternately drinking water and shivering, and at night he would have felt so lonesome and sick that he would have crowded up against or under some of his brothers and sisters and some of them would take the infection from him, and the next day they would increase and half of the chickens in that brooder or perhaps all of them might be sick and there would be a mysterious "taking off," a lot of deaths, and perhaps none would recover sufficiently to ever be great, vigorous fowls.

Little Things.

If you want to succeed with fowls you must look after little things, learn to hear and understand the different cries. They have about eight different "peeps." One for hunger and another for fright; one for cold and one for sorrow. Have you never seen a little chick stand and look around and cry pitifully? He has lost his little chum and will not stop till he finds him. Yes, they have their little chums and their little games and sometimes their little fights, too Learn to hear and understand their cries and their wants, and you will make a success of the chicken business.

What to do.

But suppose I had hardened my heart, turned on my pillow and gone to sleep, leaving the chick to fare as best he could, what would I have done the next day. For one thing I would have felt provoked at myself, and then I would have carefully looked over the chicks until I found one that stayed under the hover, or up in a corner hunched up, or with his head down acting sleepy. I would have taken him right away from the others, put him in a warm box with a bottle or jar of warm water, fed him some bread and milk with some cayenne pepper, and kept him for a day or two and if he was not well then, killed him. Never leave a dumpy chick in with the others. Kill it or keep it by itself. If you have several you might put them under a hen or in another brooder, but never leave them with the others or all may be infected. A cold, especially an influenza cold, is very infectious. The germs are communicated in the drinking water, as well as by breath, by the discharges of the nostrils and by the droppings. One sick ailing chick is a little bit of poison, going about poisoning the others unintentionally but surely.

Causes of Mortality.

Why do some people have "bad luck" with their brooder chicks? Or in other words, what is the cause of mortality amongst brooder chicks?

Sometimes chicks are badly hatched in the incubator and the trouble commences there, or even earlier, in the hens that laid the eggs. But granted that chicks are from vigorous parents and well hatched, whence the great mortality?

There are a number of causes for mortality among brooder chicks, the limited space of one page will not permit me to describe all of them I will mention a few.

Overheating or Chilling.

During the first few days this so weakens the bowels that the yolk of the egg which has been drawn up into the bowel cavity during the last day in the shell, cannot be assimilated or digested. This is the case when chicks are fed too early in life.

The last day the chick is in the shell the yolk of the egg or so much of it as has not been used in nourishing the embroyo is drawn into the bowel cavity and remains there till it is digested which should be within three days unless something occurs to prevent it.

Anything which weakens the bowels, such as over-heating, chilling, feeding too soon, or feeding without grit, are the usual causes for the non-assimilation of the yolk, and if the yolk is left too long it putrifies and brings on blood poisoning, diarrhoea being the first symptom of this.

Impure Water.

Another cause of mortality is impure water, many a promising lot of brooder chicks have died solely from being obliged to drink warm, dirty water whilst the owner has laid it to his or her "bad luck," or has comforted himself by thinking that the diarrhoea must have come from a cold.

Over-heating.

Over-heating from crowding as the chicks grow larger, is one of the most fatal causes. The chicks will sweat off in one night all they have gained during the day and will be stunted in growth if they do not die.

Draughts, imperfect ventilation, insufficient sunshine in winter, or in hot weather not enough shade, improper feeding, especially too little green grass or vegetables, a lack of

grit and last, but not least, tuberculosis, all conspire to kill our chicks.

Tuberculosis.

Tuberculosis demands more than a passing notice, for I believe that at least 20 per cent. of the deaths among brooder chicks are from this disease. Tuberculosis thrives in foul air and darkness. We take great pains to have a circulation of pure warm air in our incubators, and then confine our chicks to the dark, close air of pipe brooder system. Are your brooders so made as to furnish an abundance of fresh pure warm air and do you keep them clean? To get good results we must have clean brooders free from germs of any kind. They must be supplied with plenty of sweet air; they must be kept clean, and they must be opened as often as possible to the direct sunshine. The best destroyer of the tuberculosis germ is sunshine and fresh air.

Rhode Island Experiment Station.

The Rhode Island Experiment Station states in a report on this subject: "The simple expedient of removing the hovers and setting them out-of-doors in the full sunshine reduced the evidence of tuberculosis in 50 per cent. to only 3 per cent." It also says: "For guarding against tuberculosis, give the interiors of the brooders all the sun and air possible on pleasant days."

Dr. N. W. Sanborn in his book on poultry diseases writes: "During the past winter I was asked to visit a broiler plant where the percentage of deaths from some new disease was very large. I found that under apparently the same conditions in previous years there had been a much lower death rate. The chicks as they came from the incubators were large and healthy.

"There were few deaths until the third week. The chicks seemed to thrive for a while, then in tens and twenties, would lose appetite, become dumpish, grow thin and die. Of the chicks brooded in the dark days of January, 50 per cent. died. Examination showed little change in the gizzard or bowels. The livers were slightly darker than in health, but the lungs were soft and gritty."

These were tuberculous chicks from infected brooders, and the only thing to do was to clean up the brooders and keep things in as sweet a condition as possible, and arrange to start next season with brooders free from germs. Wash your brooders with good, hot, scalding hot, soap suds, and air them in the sunshine. Keep disease out, it is easier than fighting it, when once it gets a foothold.

INDIAN GAMES.

Anything with a strong dash of Indian Game blood in it is hard to beat.

Any bird which is brought to a strange place should not have the right eggs put under her for two days at least, so that it can be seen whether she is going to take finally to the nest selected for her. A nest egg or two will do all that is required for that time.

When a brood hen is selected where should she be set? Some quiet out house, free from drafts, will do nicely, and as such places are usually not too well lighted; so much the better. Every setting hen should have a darkened place to set in, otherwise she may leave her nest much too frequently. The nest itself may be formed in a box of suitable size, or it may be made in the soil of the floor, provided such soil is clean enough in every way. Earth is always a necessity in the formation although sometimes a fair hatch has been made from eggs incubated on dry boards covered with a little hay. The latter is by no means to be recommended, as sufficient outside moisture is not to be obtained in this way. A turf can be cut to fit the box, keeping the grassy side upmost and scooping out some earth from the center, afterwards pressing it into shape in the box, so that the sides will gently slope to the center. A good lining of short hay should be put inside. A slightly damp turf is a very good thing for the purpose, but if a good one can not be got a shovelful of rather damp earth should take its place and be beaten into shape, and afterwards lined with hay and put the eggs therein. A good many nests can be formed quite close to each other in this way.

Before setting a hen, it is a good thing to see that she is free from vermin. A thorough dusting with insect powder a day or so before putting the eggs under her, and another one four days before the chickens are due to hatch, will insure that the latter will be free from these pests for some time to come—a practical necessity if the birds are to thrive from the start.

No more eggs should be placed in the nest than the hen can cover fully. If too many are placed under her, first one and then another will be left uncovered, with the risk of a very poor hatch occurring.

Good shaped eggs should alone be used for hatching purposes. They should be sound and smooth in shell, and of good size. Very large eggs sometimes prove infertile.

SHORT CUTS TO PROFIT.

Writing in The Industrious Hen, Mrs. Livingston says:

"I am impressed with the fact that there is not sufficient thought given to minimizing labor in our large poultry establishments.

As a business the unit should and may be 2,000 birds and a competent superintendent may be able to count on that as one man's labor and at a profit at any price that has prevailed for productions within the writer's knowledge.

There is no doubt that this number or unit may be, under favorable conditions to 2500, possibly 3000 birds. This means that the feed account for their maintenance must be supplemented by the cost of one man, that wage being effected by local conditions.

New, it will be quite evident to every poultryman that to be able to accomplish this that the method of housing his birds is the point which makes this possible or impossible. It is quite as impossible to expect to locate a poultry plant intended as a business, at any point picked at hazard as it would be to start a brick yard. And to establish one with a reasonable assurance of profits it is quite as necessary to give the same consideration to location for one as the other. This does not apply to the man or woman who wishes to keep 50 or 100 fowls for such profits as they may secure from that number, but those profits will be proportionately affected by a disregard for the location of their egg and broiler factory. I could mention several poultry plants at a great loss, but it is no fault of the business, but of the architect of that particular plant and were we to sit down and figure the cost and cause of the losses it would

Beef Scraps — GUARANTEED ANALYSIS: Protein 65% Fat 8% — Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

Raw Bone — GUARANTEED ANALYSIS: Protein 25% Phosphates 45% — Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods

WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

The Largest Poultry Supplies House in the United States

Peerless Chick Feed

Is the Cleanest and Purest Chick Food possible to produce and insures

Health and Rapid Growth in Baby Chicks

GRANULATED MILK—the Pure Protein Food

315 S. Main **HENRY ALBERS CO.** Los Angeles

200-250 Egg Fowls | **WHITE WYANDOTTES** | Eggs Ready Now

Capitol Strain

Read the testimonials in our ***new*** catalogue; they will tell you more than we can.
Egg Records, Show Records, up to date, 1907

CAPITOL AVENUE POULTRY FARM

A. L. R. MANTZ ***Rural 21, Box 98k*** ***SAN JOSE, CAL.***

Black Minorcas Exclusively

Winnings at the great Los Angeles Show, January 1 to 5, 1907:

Cocks—1st and 3rd. ***Cockerels***—1st, 2nd and 3rd
Hens—1st, 2nd, 3rd, 4th and 5th.
Pullets—1st, 2nd, 3rd, 4th and 5th. ***Pens***—1st and 2nd.
Cup for Best Minorca Male, also Cup for Best Display.

Plenty of Fertile Eggs For Sale.
Send for our new illustrated catalogue.

Perham & Wheeler
R. F. D. No. 123 Lordsburg, Cal.

Mission View Poultry Ranch

White Wyandottes That Are Trap-Nested

Prize Winning, Large Egg Laying Strain. Won Nineteen Prizes in 1906!

Mammoth Bronze Turkeys Lakenvelders
Silver Laced Wyandottes

Mrs. C. D. Hubbard Box 282 San Fernando, Ca

Chicks Just Hatched — **We ship them everywhere. Pure Bred White Leghorn Chicks from the Best Egg Producers in the United States**

CALIFORNIA INCUBATOR CO., MAXWELL, MAY 27, 1906.
Gentlemen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come so far and being so long on the way without the loss of a single one, but it is an undisputed fact that such was the case We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. CAMPBELL.

CALIFORNIA INCUBATOR CO., 907 Washington St., Petaluma, Cal.

Beef, Blood and Bone Will Make Your Hens Lay

This is not a medicine but a high grade nitrogenous food. Write for free booklet, "How to make Hens Lay." Our Poultry Foods are sold by all local dealers and manufactured solely by

The Pacific Guano and Fertilizer Co.

Also Pioneer Manufacturers of ***High Grade Fertilizers.*** Indiana and Yolo Sts., San Francisco, Cal.
Write for our free booklet, "Farmer's Friend." Valuable to all farmers and ranchers.

L. D. HADLEY Originator and Breeder of **CHANTICLEER HALL STRAIN**
Barred Plymouth Rocks and **Bronze Turkeys**

1907 Winnings—
Cocks-1st, 2nd, 3rd and 4th. Cockerels-1st and 5th. Pullets-5th. Pens-3rd and 4th.

1907 Winnings—
Yearling Cocks-1st, 2nd, 3rd and 4th. Pullet—3rd. Hens-1st and 2nd. Cockerel-2nd.

Eggs and Stock For Sale
No Adult Cocks or Pens Exhibited

L. D. HADLEY, Box 6, San Gabriel, Cal.

When writing advertisers, mention Cultivator.

be an easy matter to put the finger on the exact causes. The birds are not at fault, it is "the man behind." For him who is just entering the business it is easier to avoid these rocks of failure than for him who has made his start, to find it false, because the moral courage required to recognize a mistake in what was probably christened as a pet theory is considerable, and the cost to the pocket to correct this mistake is also considerable.

Profits Large.

There is no branch of agriculture where the profits are so great as in the poultry end and there is no branch where so little advance has been made toward improvements in its management as a business as they should be. There will be another rush to get into the business as there was to the gold field in '49, because, for the few the profits will be nearly as great.

In ten years there will be as great a change in the accepted requirements of poultry as a business, as between the old hen and the incubator and the men and women who are first to recognize the necessity of conforming to these requirements will be those "in on the ground floor" and who will reap the fortunes.

The changes in the future of fortunes for the poultryman are only now becoming apparent when the place of these changes necessary become so, but there is no doubt whatever that in another generation the oft repeated statement that "there are no fortunes to be made with poultry" will be entirely disproven.

In this day where a ten thousand hen plant is a very fair sized 'chicken yard," the time is not far distant when this will be one of the smaller ones, and the profits of the larger will also increase when we have taken hold at the right end and open our eyes to necessities as yet recognized by but a few.

But then the fortunes made by the "cotton kings" will fade as wonders and the great American hen will prove a greater factor to wealth than we now have any idea. The interesting problem of the present moment is who will be the Rockefeller's, the Armours and the Vanderbilts of the poultry?

ON BREEDING GEESE.

Old geese lay a greater number of larger eggs and are more reliable than young geese. Nevertheless, if geese must be purchased, it often saves time to buy young geese rather than attempt to secure any number of old ones. Young ganders are better for breeding purposes than young geese. Young geese do not lay as many fertile eggs or produce as many goslings the first breeding season as they do the second. If geese are often changed from one place to another, they are apt not to breed well, and other conditions being equal, they breed better the third season they are in a locality than the second.

In order to insure the best results, geese for breeding should be obtained as early in the fall as possible, not later than October. They thus have an opportunity to become acquainted with the new surroundings before the breeding season. Breeding geese should have considerable excercise and be kept moderately thin in flesh through the winter by light feeding and a free range of facilities for swimming. The best ganders for breeding purposes are African and Brown China. The Toulouse geese lay well, but often do not sit. The Embden greese lay fewer eggs but make better mothers. Brown China and White China geese are prolific layers. Geese are graziers and too much grain is not good for them. To insure fertile eggs they should have access to a pond or other body of water. If this is not possible a tub of water set level with the surface of the ground may be substituted. Very early laying is not desirable, since the goslings do not thrive well unless they have an abundance of grass. For the first two or three days they should be given nothing except grass and water. Later a little feed of scalded cracked corn should be given in addition three times a day. The goslins are liable to be overcome by the heat, and should always have some place of retreat where they may escape the sun's rays.

The eggs may be hatched advantageously under hens, but the goslins should be immediately taken away from them. They may be brooded for a short time in outdoor brooders and after that confined in houses at night.

Poultry Show Dates

Los Angeles, Cal., December 5-14, 1907.

The Nineteenth Annual Poultry and Pigeon Show of the Los Angeles County Poultry Association Corporation, Comparison judging. Wm. M. Humphreys, president, No. 241 North Union Avenue, Los Angeles; D. C. Johnson, Secretary, Whittier, Cal.

San Jose, Cal., Nov. 11-16, 1907.

Annual Exhibition Santa Clara Valley Poultry and Pet Stock Association. Charles R. Harker, secretary, San Jose, Cal.

Oakland, Cal., Dec. 2-8, 1907.

Fourth Annual Exhibition of the Alameda County Poultry Association. C. G. Hinds, secretary, Alameda, Cal.

Fresno, Cal., Dec. 11-14, 1907.

Tenth Annual Exhibition Fresno Poultry, Pigeon and Pet Stock Association. George R. Andrews, secretary, Fresno, Cal.

Mating.

I have a choice Barred Rock hen that I have mated with a vigorous young cockerel, I expect next year to mate her with one of her sons and the pullets with their father. Beyond this I am somewhat muddled as to the proper matings in order to establish a flock of "line-bred" fowls. Kindly explain the proper steps to take.—G. B., Upland.

It would entirely depend upon the results of your first and second matings, the results of which nobody could possibly foretell, especially not knowing the parent birds. You would probably have to establish a double mating, keeping one pen for cockerel breeding and another for pullet. All you can do is to wait and see the results and then get someone who is a good judge to look at your fowls and tell you which colors (whether dark or light) you should mate together, also which shapes, whether blocky or rangy.—Mrs. A. B.

"This bread isn't fit for a dog to eat," growled the husband.

"Very well, dear," replied his wife; "don't eat it, then."

WHITE MINORCAS

Won at Alameda Poultry Association Show, 1907: 1st Cock, 1st Hen, 1st Pullet

EGGS FOR SALE—$2.50 per Setting of 15; Two Settings, $4.50; Incubator Lots $10 per 100.

A Few Cockerels For Sale. Prices on application to

Coulson Poultry and Stock Food Company
Petaluma, California

Maud S, 1st Prize Hen, San Jose
Bred and Raised on My Ranch

Baldwin's White Leghorns

Baldwin's Leghorns are all right in blood lines and for heavy laying right straight through the year they are unexcelled. I breed nothing but White Leghorns and make them a study, aiming at quality and market value combined.

My yards are modern in every respect and I invite inspection. Think of us when you think of White Leghorns.

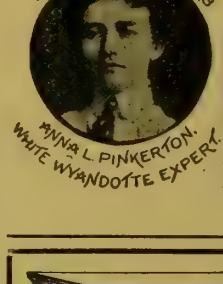
My best pens are made up of stock from the first prize winners at the great show at Madison Square Garden, New York, 1905 and '06.

All stock sold on a guarantee to be as represented.

Eggs $1.50, $2.00, $3.00 and $5.00 per setting (15). Incubator lots, $6.00 and $10.00 per 100. My $6.00 eggs are from selected yards. My $10.00 eggs are from especially selected matings of my finest birds.

Send for catalogue giving full description and prices of my matings and show records.

Frank E. Baldwin *The White Leghorn Specialist*
Phone Suburban 82 46 Washington Ave., San Jose, Cal.



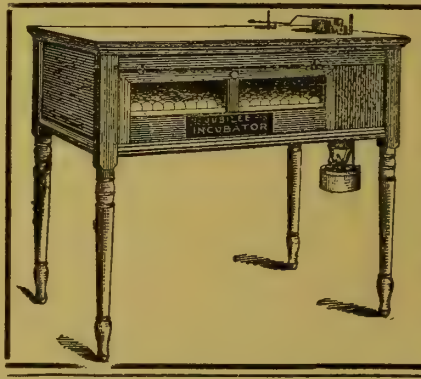
White Wyandotte Farm
INGLEWOOD, CALIFORNIA

Los Angeles Show Winnings
Poultry Breeders Association, 1907

1st Cock	1st Cockerel	1st Hen	1st Pullet	1st Pen
2nd Cock	2nd Cockerel	3rd Hen	2nd Pullet	3rd Pen
4th Cock				

Silver Cups—White Wyandotte Club Cup for Best Pen; Association Cup for Best Male; Wm. H Hoegee Cup for Best Display.

Now Booking Orders for Eggs



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THE FEATHERLY FARM ORPINGTONS

BUFF BLACK WHITE

Our yards are now mated for the season; containing winners of nearly 100 Prizes, Specials and Cups at California's leading shows. Our handsome Mating List and Catalog describes them all. Send for it today; it is free. Our birds are bred for utility and heavy egg production as well as beauty. All egg orders booked in rotation. Satisfaction guaranteed.

P. L. Harley, Box C, Redlands, Cal.

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1907 Los Angeles

"Model"	Best	"Peerless"
Made by Chas. A. Cyphers	Hot Water Incubator	Made by Henry Albers Co.

Call and See Them or Send for Free Catalogue

315 S. Main **Henry Albers Co.** Los Angeles

The White Faced Black Spanish

Are famous as layers of large white eggs at all seasons of the year. We won all prizes at the Breeders Great Show, 1907. Choice Cockerels For Sale, $5. Eggs, $1.50 per 13, $4 50 per 50, $8 per 100. Special matings, $3 per 13. Fertility guaranteed.

Mrs. W. H. O'Connor **Lock Box 112, Dolgeville, Cal.**

Bemis Plymouth Rocks

Barred and White

22 Regular Prices. **4** out of the 5 Specials given by the American White Plymouth Rock Club. ***Silver cup*** for the ***best collection*** in American Class. ***Silver Cup*** for ***best display*** in American Class. ***Hines Silver Cup*** for 10 Best White Plymouth Rocks in Show. I am able to ***furnish*** the ***best*** birds and eggs at moderate prices. I cannot furnish large lots for incubators.

Mrs. Florence E. Bemis, 1757 19th Ave., Oakland, Cal.

Please mention the Cultivator when writing to advertisers.

Eggs for Hatching

Thoroughbred White Rock eggs for hatching at $1.50 for 15 $6 per hundred. Mammoth Bronze Turkey eggs, 20 cents each. Also a dozen choice W. R. cockerels and two M. B. gobblers for sale.

Jennie R. Frater Charter Oak, Cal.
Home Phone 2179

THOROUGHBRED *S. C. White Leghorns*

They are vigorous and healthy and great producers of large white eggs. They have good size, rich yellow legs and bills. Eggs from special mated pens, $1 per 15, $5 per 100

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Have for sale Trios, Cockerels and Pullets. Eggs for hatching, settings or hundreds. Write or call,

Two Blocks North, One Block East Altadena Post Office

C. J. Ferris

BREEDER OF THE FAMOUS

Buff Plymouth Rocks

Winners of Five Prizes at the late Los Angeles show, the largest show ever held on the coast A few choice cockerels for sale. Eggs, $2 and $3 per 13. Write your wants.

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BARRED ROCKS

EXCLUSIVELY

Send for Sixteen-Page 1906 Catalogue

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Eggs for hatching $1 per 13 $5 per 100 We breed from two year old hens, and the best ones of the flock only. No stock for sale. Ranch two blocks south San Gabriel car line.

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EGGS FREE
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120 Acres devoted to poultry, fruit and dairying

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EGG $1 50 Per 15, $6. per 100

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1907 LOS ANGELES 1907

We won on White Rocks, Barred Rocks, White Wyandottes, Buff Leghorns, White Crested Black Polish.

EGGS FOR SALE. SEND FOR CIRCULAR.

Golden Crest Poultry Ranch.

Box 412 Santa Ana, Cal.

Eggs For Hatching

FROM

Standard Bred Poultry

Buff and Brown Leghorns, Buff Orpingtons, Columbian Wyandottes and Bronze Turkeys

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Blue Ridge Strain Blue Andalusians

We won more firsts in a class of 68 birds than all our competitors combined. Bred for utility and fancy purposes. Eggs, $2.50 and $5.00.

Blue Ridge Poultry Yards *128 Avenue 32 Los Angeles*

SHADE'S RHODE ISLAND REDS

The World's best layers.

Write for Folder.

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WHITE WYANDOTTES, Hubbard Stock

Heavy Laying, prize winning Strain. Eggs $2 for 15: Baby Chicks, 20 cents each. CANNON POULTRY CO.

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WHITE, BUFF AND PARTRIDGE Wyandottes

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R. D. Box D87 **L. E. BERKEY,** Fullerton, Cal.

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WHITE and BUFF. Typical shape, fine layers and fertility guaranteed. Eggs for hatching. Write your wants. ***A W Huskins,***
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CYPHERS INCUBATOR COMPANY, BUFFALO
New York, Boston, Chicago, Oakland, Cal., Kansas City.

ROUP IN TURKEYS.

A subscriber complains that his turkeys are affected with swelled head, culminating in blindness, each season. Fresh stock has been secured from other yards only to become similarly affected. It would seem that there must be germs in the yards or coops if the stock has been entirely changed and only healthy fowls were purchased, or else there are conditions about the roosting place which cause the trouble. I never knew of turkeys that roosted on the topmost bough of a tree being affected as this subscriber describes it. Roup is like consumption—develops most readily in quarters which are not reached by sunlight and where crowding and close confinement are practiced. Giving fowls an abundance of fresh air without subjecting them to any drafts, and yet affording them ample protection from the weather, is a problem that has not yet been satisfactorily solved. If lumber were cheap enough, so that we might put but ten fowls in one house or apartment measuring 10x10 feet, we might defy roup.

Illustrative of how roup cures work, last September a fine Rock hen took her brood of chicks outside the coop, and was caught in an all-night rain—a regular downpour. In the morning she was breathing with that croup-like whistle that poultrymen know means serious trouble. Against my better judgment, I commenced treating her, for her brood of chicks would have been motherless; so I soaked her head and throat in kerosene, carefully protecting her eyes; then I swabbed her throat and head with the same, using a feather and reaching up into the cleft of her mouth and well down in the throat. I put her under a crate in the sunshine, and in an hour the distressing whistle ceased. She has appeared as well as ever until a week ago, when the painful breathing commenced again. I repeated the oil treatment, but shall never use her for breeding stock. I will kill her as soon as all signs of roup disappear.

I would begin with new stock once more if I were the party with the diseased turkeys. I would if possible get a gobbler from wild stock, as they are more hardy. Then I would have trees, perches and coops sprayed with carbolic acid or a strong solution. I would have all yards plowed deep or spaded. Be careful not to crowd the brood coops, and be sure that the perches are not in line with nail holes or knot holes, so that a draft of air can hit the fowls when on the perch, for the line between a simple cold and a dangerous case of roup that may become as malignant as diphtheria is very narrow.—Michigan Farmer.

PROFITABLE POULTRY.

In my last article I promised to give figures of our little poultry plant for 1906.

The Receipts.

Two hundred and thirty hens—January 205 dozen, February 197 dozen, March 286 dozen, April 206 dozen, May 191 dozen. Two hundred hens—June 158 dozen, July 119 dozen, August 130 dozen. One hundred and forty hens—September 123 dozen, October 108 dozen. Two hundred and forty hens—November 183 dozen, December 159 dozen.

Total 2065 dozen eggs.

Incubated 995 eggs. Chickens hatched 700. Cash received for eggs $525.30. Cash received for chickens and hens, $238.75. Total receipts, $764.05. Increase of hens 100, valued at $100. A profit of $75 more would have been received if a thief had not taken part in the business; but we got him, and he will not steal any more hens for ten years.

The Breeds.

I promised in my last article to tell of our different breeds and of their comparative egg productions.

A year ago this winter we had only Barred Rocks, of the Hawkins strain, and the Single Comb Brown Leghorns, direct from first-prize-winning stock of Milwaukee, Wisconsin, in 1904. Believing we had good stock of these breeds, we were anxious to know which would be the more profitable.

In September the Leghorn pullets began to lay, and in October were laying heavily, and in November the Rock pullets began to lay, so it is seen that the Leghorns had two months the start (of the same age,) but in December the Rocks were in the lead.

In the months of December, January and February the Rocks laid one-fifth more eggs than the Leghorns, so we concluded the Rocks were the better winter layers, and when eggs were highest, but in March the Rocks got broody and fell down, and the Leghorns got right down to business, and from March to January laid about one-fourth more eggs.

The Leghorns Best.

The Leghorns can be kept on one-third less feed than the Rocks, so they are about one-third more profitable for eggs but, on the other hand, the Rocks make better friers, and the Leghorns mature into nice broilers quicker, and when adult hens are to be turned off the Rocks bring one-third more; so we find that for us, eggs being a specialty, the Leghorns are about one-third more profitable.

Last spring we invested in one dozen White Leghorns that came from Wycoff, of New York. We also bought 100 of the White Rock eggs of a Northern poultryman. We are keeping an accurate record of eggs laid by the different breeds.

In my next I will give the figures, but will now state that the White Leghorns are far in the lead. I do not think there is much difference in the color of any breed, or breeds, as it is in the strain.—Farm and Floral World.

WOLVES AND STOCK.

The United States Department of Agriculture has in press and will issue in a few days Bulletin 72 of the Forest Service, entitled "Wolves in Relation to Stock, Game, and the National Forest Reserves," prepared by Vernon Bailey, Assistant in Charge of Survey.

The bulletin calls attention to the present abundance of wolves in various Western States, the losses suffered by stockmen on the western cattle ranges, and the destruction of game in forest reserves and in national parks, with suggestions for the destruction of the wolves. Among the protective measures recommended are bounties and wolf-proof fences. The means of destruction suggested are hunting, capture of the wolf cubs, poisoning, and trapping.

Only One "BROMO QUININE"

That is LAXATIVE BROMO Quinine. Similarly named remedies sometimes deceive. The first and original Cold Tablet is a WHITE PACKAGE with black and red lettering, and bears the signature of E. W. Grove. 25c.

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Free Them From Lice

Instant Louse Killer is sold on a positive written guarantee to destroy lice on poultry, stock of all kinds and ticks on sheep formulated by Dr. Hess, (M. D., D. V. S.)

For destroying lice on calves and colts, nothing equals Instant Louse Killer. For sheep ticks it is most effective, doing away with the muss and annoyance of a "dip."

Instant Louse Killer

is the original powder louse killer put up in round cans with perforated top. Be sure of the word "Instant" on the can—there are over 25 imitations.

1 lb. 35 cts. 3 lbs. 85 cts.

If your dealer cannot supply you, send your order to us.

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White Plymouth Rocks

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The Largest Flock of Prize Winning Birds in the West

Including Wm. M. Humphrey's Entire Flock of Prize Winners. Birds in my yards won at Los Angeles, 1907, the largest show ever held in the West,

23 Out of a Possible 25 Prizes

Also at San Diego, Portland, Cincinnati, San Francisco, Fresno, Oakland, Hanford and other points, under as many different judges.

50 Males 500 Females

Will sell Singles, Pairs, Trios or Pens.

EGGS
$2.50 for 15, $10.00 for 100

From special matings containing my very best prize-winners, $10 per 15. Correspondence carefully answered. Visitors welcome.

A. J. Little
Monrovia, Cal.

Get off at Mayflower, walk north two blocks, thence west two blocks to ranch.

Single Comb White Leghorns Exclusively

Eggs for Hatching, $1.00 per 13, $5.00 per 100. High Fertility Guaranteed. Phone Park 688.

J. E. Beadle 901 St. Louis St., Los Angeles, Cal

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FOR SALE OR RENT—COMPLETE DAIRY ranch in Sunny Stanislaus; under Modesto irrigation system; 5 miles from Modesto; 3 miles from railway station. 160 acres in alfalfa, 85 head graded dairy stock, 5 head horses; dairy buildings, house and large barn, separator, etc. Splendid income. Telephone and rural delivery. Write for terms. Address BOX 25, R.F.D., Modesto, Cal.

DUCKS.

INDIAN RUNNER DUCKS—A WORLD beater for producing Eggs. Pure strain. $1.00 for 13; $5.00 for 100. Black Langshans, Prize Pen. $2.00 for 13. F. M. BENDER, Corona, California.

FOR SALE—INDIAN RUNNER DUCK eggs from choice stock, $1.00 per setting of 13; incubator lots at short notice at $5.00 per 100. F. J. QUANT, Madera, California.

EGGS FOR HATCHING.

EGGS FOR HATCHING—S. C. RHODE ISland Reds and heavyweight Black Minorcas, $1.50 per 13. MRS. L. M. RUCKER, R. F. D. 3, Chino, Butte Co., Cal.

GOLDEN LACED WYANDOTTES. Blue Bibbon winners wherever shown.— At Oakland 1907—won four, first —three, second and two third premiums.—Eggs from prize-winners $1.50 and $2.00 per 15. Fifty choice birds $1.00 to $2.00. Eggs proven infertile will be replaced if returned to me at buyer's expense. J. P. ENGLISH, Arroyo Grande, Cal.

ORPINGTONS AND REDS; PEKIN DUCKS—13 prizes on 16 entries, also silver cup, at "Breeder's Show" 1907. Eggs now ready, can't help but hatch winners, we breed them that way, fifteen years' experience counts. Our stock are great layers, rapid growers, top market quality, we guarantee satisfaction. GOODACRE BROS., Box 45, Compton Cal.

McKINLEY POULTRY FARM—BREEDERS of buff and white Wyandottes. Member American Buff Wyandotte Club. Golden Seabright and Pyle Game Bantams. Eggs $3.00 and $2.00 per 13. Take San Pedro Interurban car to McKinley, first house north. BOX 11, R. F. D., Gardena, Cal.

BLUE ANDALUSIANS—I did not exhibit this year but have better stock than ever. Eggs for hatching, $2.50 per 14. Incubator lots $7.50 and $10.00 per 100. No fear of inbreeding as we have three strains. MRS. T. R. GRIFFITH, 3111 Walton Ave., Los Angeles.

WHITE LEGHORN AND WHITE WYANdotte eggs for hatching, from extra choice, trap-nested, bred-for-eggs stock. Leghorn eggs $5.00 per 100; White Wyandotte eggs $1.00 and $1.50 per setting, $6.00 per 100. F. T. McLAUGHLIN, Gardena, Cal.

BLUE RIDGE POULTRY YARDS, W. H. Brown, Prop., 128 Ave. 32, Los Angeles, Cal. Breeder of Blue Andalusians. Won more first prizes than all our competitors combined. All specials went to our strain. Eggs $1.50 and $2.00.

S. C. WHITE LEGHORN EGGS FROM THE bred-to-lay Blanchard strain. Large birds. $1.00 for 15; $6.00 per 100; Free city delivery. C. M. GIBBS, R. F. D. No. 4, Los Angeles, Cal. Phone W. 591.

FOR SALE—PURE BRED STOCK, S. C. White Leghorn Eggs. Large eggs, great layers, eggs for hatching only. $1.50 per 15; $6.00 per hundred. RICHARD POWERS, Anaheim, Cal.

35c PER DOZEN; S. C. WHITE LEGHORN eggs for hatching, fine stock, large eggs, 95 per cent. fertile. Carefully packed. MATT MARTIN, R.F.D. G street, Ontario, Cal.

BLUE ANDALUSIAN EGGS FROM THOROugh-bred stock, fine laying strain, $1.00 per 14. This adv. will not appear again. OAKDALE RANCH, Fallbrook, Cal.

FOR SALE—EGGS FROM TWO PENS OF extra fine White Plymouth Rocks, $2 per 13. FRANK H. THOMAS, 1820 Hobart Blvd., Los Angeles, Cal.

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$1250—10 1-3 ACRES LEVEL LAND, 3 ROOM house, barn, well, family orchard; an ideal chicken ranch; price $1250. 15 miles from Petaluma. 5 miles from Santa Rosa WM. MAGER, SANTA PAULA, CAL.

FOR SALE—BLACK VEGETABLE SOIL 12 to 18 inches deep yielding greatest average crops raised in North America. Only $15 to $25 per acre. One-fourth down, balance 5 years at 6 per cent. Address, W. R. GILSON, 121 E. 4th St., Los Angeles, Cal.

FOR SALE—TO HOMESEEKERS. HEMET valley, Riverside County, Cal. Consists of a very large acreage of rich level land, with abundance of good mountain water; citrus and deciduous fruits, alfalfa and potatoes yield abundantly; high and grammer schools. One can make money from the soil and enjoy the best climate in California. For literature and the $3 round trip fare, see F. N. CALHOUN, 105 S. Broadway, Los Angeles, Cal.

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IMPORTED CLYDESDALE AND HACKNEY Stallions. I sell better stallions for less money than any other man in the State. Can sell you a good stallion for $1000. WM. McKIE, 407 Aliso street, Los Angeles, Cal.

MACHINERY.

FOR SALE—32 H. P. FAIRBANKS-MORSE distillate engine in perfect condition. A snap. 943 N. MAIN STREET, Los Angeles.

FOR SALE—5 H.P. WHITE & MIDDLETON engine used only a few months. Will sell cheap. P. O. BOX 678, Station C, Los Angeles.

RANCHES FOR SALE.

RANCH FOR SALE—240 ACRES IN Mariposa Co., 40 acres under cultivation, balance easily cleared. Plenty of water. Suitable for hay, grain, stock raising, or apple orchard. Price $900. For information, address CHARLES GLISCINSKI, Los Angeles, California.

POULTRY FOODS.

WEST COAST POULTRY FOODS AND REMedies are the best made and, quality considered, the cheapest. If your dealer doesn't sell them, send to us. Booklet free. Send us names of 12 persons keeping poultry and we will send you free "The Poultry Manual" by those high authorities F. L. Sewell and Ida E. Tilson, profusely illustrated. WEST COAST STOCK FOOD CO., 818 San Fernando St., Los Angeles, Cal.

ARMOUR'S BEEF SCRAPS, MEAT MEAL, and Blood Meal for poultry feeding are highest in digestible protein. If your dealer does not handle them write us direct. Circular containing formulae free. THE ARMOUR FERTILIZER WORKS, 736 H. W. Hellman Building, Los Angeles.

POULTRY.

HARRISON'S R. I. REDS AND WHITE Rocks. The best out West; 12 awards at Poultry Breeders' Show, including 1st and 3rd Red cockerels, 1st and 2nd Red pullets in a class of 36 pullets; White Rocks 1st pen, 1st and 3rd pullets and 3rd cock. New circular. Eggs $2.00 for 15, $5.00 for 50, $8.00 for 100. LAKE AVENUE POULTRY YARDS, 757 N. Lake Ave., Pasadena, Cal.

FOR SALE—STANDARD BRED WHITE and Buff Leghorn pullets, $9.00 per dozen. White and Buff Leghorn hens, $1.00 each. One small Mann Bone Mill mounted on stand, $5.00; will exchange bone mill for White Wyandotte eggs for hatching. W. O. SHAW, P.O. Box 201, San Luis Obispo, Cal.

COLUMBIAN WYANDOTTES, THE FANCY and Utility Fowl. Eggs and stock for sale. Eggs from Pen No. 1, headed by First Prize Cock at late Los Angeles show, $5 for 13; No. 2, $3. Also Black Tailed Japanese Bantams, $4 per 13. Frank J. Ironmonger, Hollywood, Cal.

SINGLE-COMB WHITE LEGHORNS, FINE white, large, birds; good layers. Hatching and shipping chicks. Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER, Ontario, Cal.

BUFF ORPINGTONS—I WILL HAVE A few settings of Buff Orpington eggs to spare from best stock obtainable. From St. Louis and California prize winners. $3.00 per 12 eggs. MRS. N. F. MORSE, Fullerton, Cal.

PUPPIES.

FOR SALE—SCOTCH COLLIE PUPS FROM prize winning stock, sired by Brookmere Hopeful, noted Chicago and Detroit winner, and Dos Robles Towser, winner three firsts at Venice. If you want workers get a pup and teach him yourself, he will do the work of two men. Send for circular and pedigree. WALTER S. DAVIS, 337 South Spring street, Los Angeles. At stud, Brookmere Hopeful, Dos Robles Towser.

FOR SALE—SCOTCH COLLIE PUPPIES. Pedigree furnished with every sale. $15 and $25. Write for description. E. B. VARIAN, 539 Douglas Bldg., Los Angeles.

TREES.

FOR SALE—4000 VALENCIA AND 1000 W. Navels; one year buds on three year roots, clean and vigorous; buds taken from bearing trees. F. E. CHAPMAN, R. F. D. Box 34, So. Craig Ave., Pasadena, Cal.

FOR SALE—MISSION, BLACK SPANISH, and Taft's Kadola Figs; fine trees at 25c and 35c. Order quick if you want them. H. L. BAUER & SONS, 737 South Spring Street, Los Angeles.

PALMS, PALMS, PALMS. TWO YEARS old, field grown. Date palms, carefully packed with moss, 12 for $2, 100 for $10. SOUTHLAND NURSERIES, Redlands, Cal.

FOR SALE—20,000 EUCALYPTUS, READY for April planting. Write for prices. A. L. HURTT, San Bernardino, Cal.

WATERMELON SEED.

FOR SALE—FINE RED CHILLEAN WATER Melon seeds. Price 50c a pound. WILLIAM BRITTON, Burbank, California.

Will Not Breed.

I bought a standard-bred 4-year-old mare; about 3 months ago. I wanted to breed her, but so far have not been able to do so. She seems well, but has never shown to be in heat. Had her opened up, but it did no good. She has never been bred so far as I can find out; can you recommend anything. —N. R. B., Riverside.

The animal may be too fat, if so put her at hard work until thin, then breed her. Another plan is to stand her in a stall near a stallion, but out of his reach; this is likely to bring her in heat.—(Dr.)W. N. S.

Hollywood Table Grapes.

What are the best table grapes to grow against the Hollywood foothills where the soil is pure disintegrated granite to the depth of several feet?—A. L. R., Hollywood.

Cinsaut is a good grape for such a situation. We do not know of any better. Black Morocco is also a good one. The former is a mid-season grape and the latter is a late one.

Tarred Rope.

Will you please inform me how the vineyardists prepare tarred rope to tie up grape vines, so the rope will last until the vines are able to stand alone.—J. H. G., Newcastle.

Stir tar in hot water till you get a dark colored liquid and soak your rope in that.

Stop the churn as soon as the butter granulates if you want to work out all the buttermilk.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

Spraying Grapevines.

I am writing you about spraying grapevines with Bordeaux mixture, to inquire as to results from your past experience along these lines.

We had some mildew last season and if spraying will help keep it out we want to spray.

If you can spare the time to answer a few questions we will feel very grateful to you and endeavor to profit by your past experience.

1. Do you spray grapevines and how often, once or more than once in a season?
2. When do you spray?
3. What solution do you use?
4. Do you spray the ground around the vine?
5. What has been your experience with muscat vines as to spraying?
6. When do you sulphur and how many times?
7. Should a person use bellows or will a sack answer the purpose?
8. When do you advocate pruning muscats? Last season some of our neighbors pruned in December and the first part of January and for some reason their crop was very light, some of the shoots did not come out until after most vineyards were well in leaf. The later pruning was much more satisfactory, or feast the crops seemed better.
9. Do you think vines pruned in February or the first part of March will give better results than earlier pruning?
10. Will the difference in the time of pruning make any difference in the time of ripening?

I am asking these questions as I have been unable to find any article in the Cultivator during the past year that gives me the information desired, as I always read it and am on the lookout for articles on these lines.

We are experimenting with the peach blight and so far have very little in our orchard. We sprayed good in November with Bordeaux; 15—25—100 and last week sprayed again with 8—15—100, and believe we stand some show of getting a crop.

The County Horticultural Commissioners were here yesterday and they said they found less blight in our trees than any others they had examined. I had a letter from Prof. M. B. Waite today and according to his directions we are doing all that is now known for the prevention of the disease.—H. B. B., Hanford.

1. One spraying has seemed sufficient for the needs of the vineyard. We have sprayed twice a couple of times, but it did not give us any better results.

2. Before the vines start to grow. We will spray this week if the rains hold off long enough to make it possible to run the tank on the vineyard. I had a young chap here a couple of years ago, that turned all the men to spraying on a showery day to save their time to the ranch. He was wise in his own conceit, but the rain washed the spray away before it ever had time to set. Choose a dry day or one at least when the indications are that it will be dry long enough to allow the spray to dry on the vine.

3. The old Bordeaux formula 4—4—40, or 4—4—50 is the one used for vineyards.

4. No, enough falls on the ground directly around the vine.

5. I believe in it most thoroughly, so do many of the best vineyardists in this neighborhood. There are three spraying outfits working on four vineyards between here and town. The fourth man has been here to borrow our outfit, so you see how general it has become.

6. When the vines need it. We often do not have to sulphur at all if the Bordeaux has been thoroughly applied. The rule is to sulphur when the vines have formed two tiny leaves, sulphur at blooming, and then again in three weeks.

7. The bellows by all means if applied by hand. There are now larger machines coming into use. The sack way is wasteful and does not put the sulphur into and under the leaves where it is needed.

8. This is a hard question to answer. Fifteen years ago we all practiced very late pruning, but the vines after a couple of years did not hold back and escape frost any better than those pruned earlier. It was only when the land was left uncultivated that the growth held back. Now to leave the ground baked that late is to invite sunburn, thrips and red spider.

9. We rarely are ready to prune the muscats before February as we prune the orchards first, and if by reason of rain, we are delayed in pruning until March we do not see that the vineyard either leaves out sooner or ripens any sooner than the first pruned portions.

Now my friend Prof. Bioletti does not think I am right in recommending the use of Bordeaux mixture for mildew. I think probably we are both right. While, as he says, the Bordeaux will not kill the hold-over spores of mildew, yet I believe that a clean grapevine is like a clean person, not liable to disease. We make the surroundings of them clean and destroy harboring places with Bordeaux; we are making it hard for the mildew to exist. I know a vineyard adjoining mine that did not have a renter for two or three years; the owner merely scraped over the ground and sold the crop to anyone on the vines. I had mildew in the row of vines next to this vineyard every year. This vineyard was sold and cared for well by the new owner. I do not have mildew along that side. Last year Dr. Sherman thought the spraying need not be done and when we came to pack Emperors there was mildew enough to make the culls heavy. We also had to buy sulphur at $75 a ton in Los Angeles and pay the freight, after the San Francisco fire.

I am glad you are having success with your peaches, the trees we sprayed in November look clean at present. We cannot spray them until the land dries enough to drive the spraying outfit on the land. It almost looks doubtful if we can give them the second dose at all.—M. E. S.

Hardpan.

Seeing an article in February 14th number upon reducing hardpan, I would like to ask some questions.

If all hardpan can be reduced except that formed by the cementing process, please inform me in what sort of soil the cementing occurs. Is it in the reddish clay?

After close observation, I am firmly of the opinion that hardpan is continually forming and if the soil is left uncultivated beneath the trees, as is the custom in some places, it will become harder and harder, until it can scarcely be broken, except by blasting, which I believe injures the trees. Does not hoeing and keeping the soil broken under the trees belong, rightly, to the regular cultivation.

Please answer in next number of the California Cultivator.—H. M. T., West Riverside.

The hardpan that affects the soil in West Riverside section is without doubt due to the lime that is present in the soil. This is quite noticeable in places where excavations have been made. The drainage has been from the lime rock hills in the Sky Blue Mountain section at some time and the deposit has been made at some remote time. The amount of lime is being constantly increased by irrigation water also, as water from the Riverside water supplies is full of lime. You are right that the soil should be stirred beneath the trees every year. There is no practical

way that I know we are aware of, whereby the hardpan that forms below the reach of the plow can be broken up.

The cementing process will take place in any soil when an excess of lime is found and is constantly being added to by the soluble form through irrigation water.

Walnuts in Fresno County.

Do you think the English walnut could be successfully grown in Southern Fresno county?—M. A. Reedley.

We took the liberty of sending this query to Mr. George C. Roeding, of Fresno, believing that he is better able to answer the question than anyone else, for he lives in the section the inquiry comes from, and his competency to answer is unquestioned:

"Your valued favor of the 26th inst. received, enclosing letter from Mr. M. A. of Reedley, California. In reply to same I beg to state that the walnut can be grown successfully in this valley, and there are quite a number of trees growing on my place and a number of other places, all of which are growing fairly well. In a general way, I do not think that walnuts can be grown as successfully here as they can in the coast counties and in Southern California, where they have fog and cool summer winds. As far as the flavor of the nuts is concerned, there is practically no difference between those grown here and those in Southern California. One fault found with nuts grown in the San Joaquin Valley, is that the pellicle covering the kernel is rather dark in appearance and this militates against the sale of the nuts. The walnut is also subject to the yellow mite, which is indigenous to dry climates, and it is necessary to dust the trees with sulphur in order to prevent them from being defoliated. One or two sulphurings in a summer season is all that is required. After the trees are eight years old, they do not seem to be subject to the attacks of this little insect as they do when they are young."

Bumble Foot.

Will you kindly answer the following question in the next issue of the Cultivator. One of my hens has a sore foot. It looks like a stone bruise. It is on the bottom of her foot, and is soft, but the skin is quite tough. She was a little lame when I bought her about a month ago, and has got worse lately. The roosts are 2 1-2 feet from the ground with soft sandy earth underneath them. What is the matter with her and what will cure her?—Mrs. S. P.

Your hen has bumble foot. In most cases bumble foot seems to be the result of a bruise, and is usually caused by the fowl jumping from a high roost on to a hard floor. It is often caused by an irritation, however, of some foreign body such as splinters, bits of glass or briars, foxtail or burrs.

A case caused by a simple bruise is often aborted by washing the foot in strong vinegar, or painting the thickened skin with tincture of iodine. Most of the cases which have come to my attention have developed puss. These should have the puss cavity opened with a clean, thin knife or lancet, the matter washed out with carbolized water, and the entire surface of the cavity itself painted with a solution of nitro of silver, ten grains to one ounce of distilled or rain water. Birds that have had the puss cavity opened should have the foot bandaged with clean linen and be kept on clean, dry straw for a week. It is very important to keep dirt and germs out of the wound.—Mrs. A. P.

Punctuation.

Please let me know who wishes the "uniform and correct system of punctuation" mentioned in the Cultivator of January 24. I think I could qualify. —Subscriber, Oleander.

The world in general would welcome such a system—who is yearning for it specifically we do not know, but inasmuch as there occur several misspelled words in "Subscriber's" letter, we doubt if he has the necessary educational qualifications to evolve it.

Planting Grapes at Imperial.

In your issue of the 21st. I notice that you advise planting table grapes 8 to 10 feet; would you tell me your reason for this, as after sixteen years of experience with the raisin grape (Muscat) in El Cajon valley it has led me to the conclusion that for economy in cultivation, picking, etc., 12x12 is the best plan.

Down east they plant the Malaga almost entirely and they tell me it makes a very large growth. If this is so would it not be better to plant them at any rate more than 8x10? It seems to me it would be difficult to get between the rows to make easy work, besides the fact of running water in so small a space and also of not being able to turn around in the vineyard with a team at picking time.—H. K., Imperial.

We got our information from an Imperial man who has quite an extensive vineyard. He told us that he planted his vines 8x10, and when we asked if it was not too close, he said no. He claimed that he got more grapes that way and that was what he was after. We were after information for a personal reason and that was what we got. It seemed to us that it was too close, but we do not like to put our judgment against another man's experience, especially when the conditions are entirely new and untried in a general way. We would like to hear from some more Imperial men who have had experience along this line.—J. W. M.

Split Apricot Trees.

Being only a beginner in the fruit business, my ideas may be erroneous, but I give them for what they are worth, and hope they may at least lead to some investigation by more competent parties.

Last year I had a 3-year-old apricot tree split down the main stem, so cut it off about fifteen inches above the ground. It has made a fine growth, throwing out branches a good distance apart and now it is pruned promises to be the strongest tree I have. I have two more this spring, which I have treated the same way, although four years old are already throwing out buds, which seemed to be dormant.

My idea is that in raising apricot trees, if at two years old the main branches are so placed that they will probably split, it would be best to cut the whole top off and start a new set of branches from the main stem.

Any suggestions on this subject will be greatly received.—F. W. C., Corralitos.

We have saved a great many apricot trees from splitting by going through the orchard and bolting suspicious-looking crotches. Mark the trees that you think may split, measure the length of the bolt needed and when you put them in, use a washer on the nut end. The nut and head of the bolt will soon be grown over, and as the crotch grows together, the whole bolt will finally disappear. It is impossible for a tree to split when so treated.

Budded Trees.

We would appreciate your advice in regard to nursery stocks for Oranges, Lemons and Satsuma plums—what seed to use, and how to prepare seedbeds, etc. Please answer through Cultivator and oblige.—C. F. R., Orange.

Pomelo or Sour stock are good for orange and lemon stock. Peach is the best stock for Satsuma plum where the land is well drained.

There was an article on Page 162 in the February 14th issue of the Cultivator, that gave directions for the making of an orange seedbed.

Peach pits should be buried in damp sand in the fall. As they begin to sprout, take them out and plant in the nursery row six inches apart. The rows should be four feet apart.

Black Walnuts.

I have several hundred pounds of black walnuts to dispose of and would like to know if it would be too late to advertise same; also how much per pound should I receive.—M. G., Arroyo Grande.

An experienced grower tells us nuts may be planted up to April 10th, but does not know the price per pound.

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We will send you an Old Trusty on free trial for one, two or three hatches and pay the freight. If you find the incubator not exactly as represented, and if it does not do the work, return it at our expense. We have confidence in our machine or we wou d never make this offer.

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Is about the extra cost to the buyers of many of the ***cheap***(?) chick foods. Why? Waste—that's why. You buy a 100-lb. sack of so-called chick food, but if your chicks only eat 66⅔ lbs. and the rest is waste, have you not added 33⅓% to the price you paid?

The waste in many cases is lack of knowledge by the makers of what to use and the proportions to use of the various grains. In A. C. W. Chick Food you will find ***no waste.*** Your chicks will eat all A. C. W. and ***digest*** it. A. C. W. is put up in sealed sacks. Accept no substitute. At all dealers or direct from us.

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EGGS Ringlet Barred Rocks $1.50 and $2.00 per sitting 15. Black Minorcas (Albert strain) $1.50, and $2.00 per sitting 15. Mammoth Pekin Ducks $1.00 and $1.50 per dozen.

EDWARD A. HALL, WATSONVILLE, CAL.

Magnolias from Seed.

Can you, or any of your readers, give me a pointer on propagating magnolias? I have experimented with seeds, but failed to have any sprout. And information on the subject will be appreciated.—M., Riverside.

The magnolia is a swamp plant native to the Southern states, and needs both heat and moisture, not only for starting the seeds, but also for the best development of the trees. The seeds do not keep well, and as a rule should be planted as soon as ripe. They usually have a glutinous substance surrounding the seeds, and this is best washed off, after which the seeds should be planted in a soil lightened by sand or leaf mold, or both, and should be kept wet at all times and as warm as possible. If on a hotbed, better results will be had. They are oftimes slow in generating, and one must be patient in keeping the soil in a proper condition of moisture. It often happens with eastern nurserymen, that seed planted in the fall, does not generate until the following spring.

Pruning Walnuts.

In pruning walnut trees; mine are two years old. They grew so fast last year, I had to stake them and the branches up out of the way. I have headed them too low and will have to cut back, or cut off lower limbs this season, and I am afraid again next year, for I think I will not be satisfied with the height of head after new growth comes out; wouldn't summer pruning be advisable when limbs lop down in this way?—H. S. T., Lordsburg.

The best practice is to cut off all branches that grow in the wrong place, as early as possible after noticing them. Go over the young trees in June and again in July and cut out all shoots that turn down or cross others; also drive a stout stake close to the young tree so as to tie up branches that you want to keep and which would otherwise grow down. This stake should be of 2x2 redwood and eight or nine feet long, and will do to keep the tree in place as well. Head your trees at about four and one-half to five feet from the ground.

Tule Pests.

Please advise me how to get rid of cattails (tule) that grow in a waste water ditch, without injury to the adjacent land, though for twenty feet on either side nothing is growing. —A. H. H., Riverside.

We know of no way to get rid of them except to dig them up. If the soil is well drained they will not again infest the land.

Beans.

Will you please let me know through the Cultivator if it is advisable to plant beans in a year-old vineyard, planted from cuttings. The soil is rich. What kind of beans would be best. If beans won't do what else can be recommended.—A. S., Santa Rosa.

If you are not prepared to irrigate your vineyard, it will be very bad policy for you to grow anything between the vines. If you think you will have room enough cultivate and irrigate. Large White, Black Eye and the Pink beans are the best varieties for your section.

If any crop is raised between your vines, there is none better than a bean crop.—J. W. M.

Bulletins Wanted.

Will you kindly inform me through columns of the Cultivator to whom I should apply for Bulletins on Dry Farming, practiced in the states of Utah, Kansas and Nebraska; also for Forest Service Bulletin, 72, and oblige. —H. L. D., Stockton.

For Forestry, send to Forest Service, Department of Agricultural, Washington, D. C.

For others: Directors of Agricultural Experiment Station—Manhattan, Kansas; Lincoln, Nebraska; Logan, Utah; Fort Collins, Colorado.

We believe the last named has issued an excellent bulletin, but we have mislaid our office copy.

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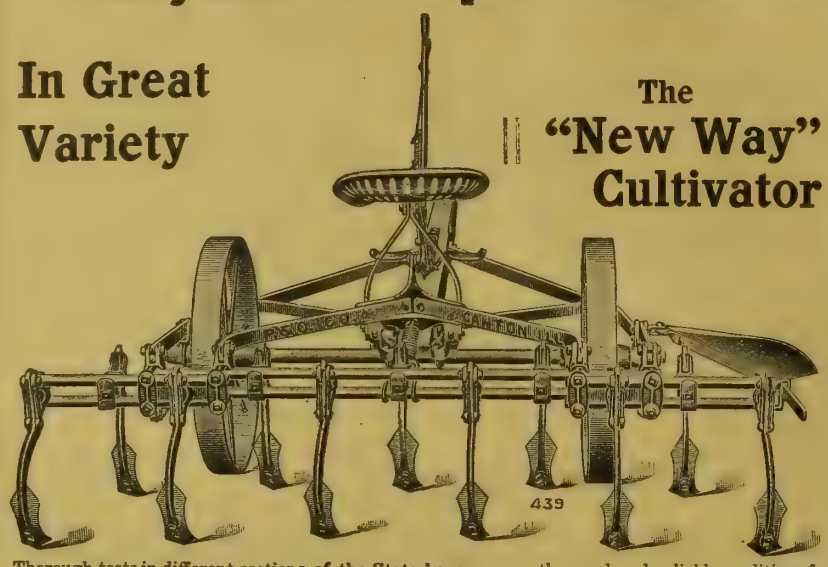

Thorough tests in different sections of the State have proven the good and reliable qualities of this tool. There is great clearance space between front and rear rows of shovels. It is raised and lowered with the utmost ease and both rows of shovels are on the same level at all depths.

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General Agriculture

CALIFORNIA'S CEREAL WEALTH.

FORTY-EIGHT counties of California have sent in statistical reports to the State Agricultural Society for the year 1906, as required by law. These show a total cereal acreage, and yield and value as follow:

Wheat, 1,458,284 acres yield 720,023 tons, or 24,000,767 bushels, valued at $13,289,904; barley, 1,750,756 acres, yield 849,490 tons, or 33,979,600 bushels, valued at $16,987,575; oats, 314,507 acres, yield 131,126 tons, valued at $3,331,980; corn, 71,879 acres, yield 65,106 tons, valued at $1,532,520; rye, 21,158 acres, yeild 6,629 tons, valued at $286,255; buckwheat, 400 acres, yield 300 tons, valued at $7,500.

This gives a total grain acreage of 3,616,984, a total yield of 1,772,674 tons, of a total value of $35,425,734.

The Hay Crop.

The same forty-eight counties give the hay crop for 1906 as follows:

Alfalfa hay, 338,788 acres, yield 1,400,822 tons, valued at $8,713,903; grain hay, 1,822,380 acres, yield 2,636,979 tons, valued at $21,628,294; grass hay, 54,633 acres, yield 75,376 tons, valued at $570,230.

These give a total hay acreage of 2,215,801, a total yield of 4,113,177 tons, of a total value of $30,912,427.

These figures show the total value of hay and grain to be 66,338,161, and it will be noticed, as was the case in 1905, the value of the hay crop acre for acre is considerably more than the value of the grain crop. In other words while the grain crop shows an average return of $9.80 an acre, the hay crop shows an average return of $13.95 an acre. It is the greater yield and value of alfalfa which enlarges this difference, and yet not altogether, as it will be noticed that the average value per acre of grain hay is $10.80, which is $2 an acre more than the average value of grain. It is often a problem with the farmer whether to cut certain foul grain for hay or not. The showing here would seem to be in favor of cutting everything for hay that will not make good, clean grain.

Total Acreage.

As we have said, the figures heretofore given are computed from the returns from forty-eight counties. This leaves nine counties that have not reported. There are fifty-seven counties in California all told, and as nine is less than one-sixth of fifty-seven, it would be conservative to add one-sixth to the fore-going figures to arrive at an estimate for the entire State. On this basis we find the total grain acreage of the State to be 4,219,808, the total yield to be 2,068,113 tons, and the total value $41,330,023. The total hay acreage on the same basis would be 2,585,101, the total hay yield 4,798,705 tons, and the total value $36,014,498. These figures give a grand total acreage of hay and grain for 1906 in California of 6,794,909, a total yield of 6,866,818 tons, of a total value of $77,344,521.

The total figures for 1905 were $77,232,595, showing only $111,926 difference in the aggregate value of the cereal crops of the State for the two years, the slight difference being in favor of 1906.

It is worth something to know the acreage and value of the products under consideration, and the foregoing figures, returned to us in two successive years, are given as the best estimate that can be made from the resources indicated.

Beans and Potatoes.

Returns from the same forty-eight counties, with one-sixth added as an estimate for the products of the nine counties that failed to make returns, show the total bean crop of California for 1906 to be 256,751,714 pounds, valued at $8,060,948; for the same year the total crop of Irish potatoes was 355,794,507 pounds, valued at $3,772,446, and the total crop of sweet potatoes was 34,351,835 pounds, valued at $4,171,139.

The total value of all potatoes and beans is $12,250,532. This amount added to the value of cereals gives a total of $89,595,053 as the total of California's leading agricultural staples (exclusive of products of the tree, vine, and garden,) for 1906.

"I don't know why, but I always feel as if young Softed ought to have a 'To Let' sign hanging on him."

"Perhaps it is because he always has such a vacant air about him."

CORN CORN CORN CORN

Plant Eastern-Grown Seed Corn

Johnson & Musser Seed Co.

Up-to-Date Seed House

Iowa Silver Mine, Grown on the Rosemead Ranch by James Gooch from our Eastern-grown Seed.

We have just received our usual carload of Nebraska-grown hand-picked Seed Corn, and offer it at the following prices f.o.b. Los Angeles:

King of the Earliest, 85 days. The earliest Dent variety. Ears short, 12 to 16 rows, well filled. Grain long and yellow, making an extra quality meal. Per lb. 5c; 100 lbs. $3.50.

Improved Leaming, 90 Days. Ears are large and handsome, with deep, large grains; orange-yellow color and red cob. Per lb. 5c; 100 lbs. $3.50.

Pride of the North, 90 Days. One of the best sorts; ears have from 14 to 16 rows 8 to 10 inches in length, slightly tapering; color light orange. Per lb. 5c; 100 lbs. $3.50.

Minnesota King, 100 Days. A large-grained variety; yellow. Per lb. 5c; 100 lbs. $3.50.

Wisconsin White Dent, 90 Days. A perfect white Dent corn, of good quality, resembling the Leaming. Per lb. 5c; 100 lbs. $3.50.

Champion White Pearl, 90 Days. A fine white flint corn. Per. lb. 5c; 100 lbs. $3.50.

Early Mastedon. Having grown and sold the Early Mastedon corn four years, we recommend it as being decidedly the best of all Yellow Dent varieties. Every one who has seen it grow is enthusiastic in its praise. Large ears, deep grains, and as many as 24 rows on a cob. Eastern grown, per 100 lbs.$3.50.

The Iowa Silver Mine. A large White Dent. The grains are as large as the Hickory King, but longer, having a small cob. It is the most desirable of all White Dent varieties. Per 100 lbs. $3.50.

Red Cob, Ensilage. A large stalk with a profusion of leaves which makes it the most desirable for ensilage. Price, per 100 lbs. $3.50.

Stanford White Flint. An excellent White Flint corn. More prolific than the King Philip. It is an excellent extra early table corn. It has long ears and a small cob. Price, per lb. 5c; per 100 lbs. $3.50.

White Cap Yellow Dent. Exceedingly prolific and hardy, resisting drought much better than other varieties. Per 100 lbs. $3.50.

Reid's Yellow Dent. This is the variety that has been brought to a high state of perfection by the Illinois growers, and drew the medal at St. Louis because it averaged the greater number of pounds per bushel. Price, per 100 lbs. $3.50.

Kink Philip, 90 Days. A small yellow variety, very popular in this market. Price on application.

Hickory King, 110 Days. A white variety, having the largest grain with the smallest cob ever introduced in a white corn. Price on application.

Johnson & Musser Seed Co. **115 N. Main St., Los Angeles**

CROP ROTATION.

While the good results following a well considered crop rotation have long been known, the South Dakota Experiment Station has made a series of tests during the past eight years that have brought out its importance in the maintenance of soil fertility that will surprise most farmers.

During the eight years referred to twenty-three rotations were carried out at the station, and wheat was grown in each one. It was found that the best average yield of wheat was obtained where the crop followed either corn or potatoes. Following these crops in the order of their merit as preparation for the growth of wheat, come summer fallow, millet, vetch, peas, wheat and oats.

According to the results obtained, the dryer the season or the more unfavorable the conditions for the production of the maximum crop of straw and grain, the more important becomes the introduction of a cultivated crop in the rotation. Wheat being a more particular crop than oats it should have a better place in the rotation than should the latter crop.

Flax is not more exhaustive of the fertility of the soil than are the other grain crops.

The growth of nitrogen-gathering crops as represented by Canada field peas and by vetch has increased the growth of straw in the following crops without materially increasing the yield of grain. This has been the most marked where peas have been plowed under as green manure or "hogged down" on the land.

Plowing under peas for green manure has not yet shown any benefits over a summer fallow.

At the end of eight years land that has grown wheat and corn alternately is producing better crops of wheat, of both straw and grain, than is similar land upon which wheat has been alternated with vetch and with summer fallow.

It has not on our soil proved profitable as yet to manure land that grows wheat alone.

POTATO SPRAYING.

The fourth year of the ten-year series of potato spraying experiments begun in 1902 is now completed.

At Genevea Experiment Station five sprayings increased the yield 119 1-3 bushels per acre, while three sprayings increased at 107 bushels.

The gain was due partly to prevention of late blight and partly to prevention of rot. At Riverhead, the gain due to five sprayings was 82 bushels per acre and to three sprayings, 31 1-3 bushels. Here, the flea beetle was the chief enemy.

In thirteen experiments, including 166 2-3 acres, the average gain due to spraying was 46 1-2 bushels per acre; the average total cost of spraying, $4.25 per acre; the average cost of each spraying, 98 cents per acre; and the average net profit, $20.04 per acre.

In fifty experiments, including 407 acres, the average gain due to spraying was 59 1-2 bushels per acre. In these experiments the average total cost of spraying was $4.75 per acre; the average cost for each spraying, 92 cents; and the average net profit, $29.85 per acre.

Potatoes are in no way injured by Paris green properly applied: viz: in moderate amount (one to two pounds per acre) with Bordeaux mixture.

In unsprayed fields the loss from blights, rot and flea beetles was at least 50 bushels per acre on the average. Most of this loss was due to late blight and the rot which follows it.

The general tendency of spraying is to reduce the amount of rot. In most cases the reduction is very marked; in some cases there is no difference; and occasionally spraying increases the amount of rot. It depends on weather conditions and the thoroughness of spraying. But whatever the effect on rot, sprayed plants always give a larger yield of marketable tubers.

Judging from the experiments thus far made it appears that spraying for blight is an operation which no potato grower in New York can afford to neglect. Thirty-three farmers' experiments made during the past three years show an average net profit of $22.79 per acre due to spraying.

Commence spraying with Bordeaux when the plants are six to eight inches high and repeat at intervals of 10 to 14 days throughout the season, making, in all, five or six applications. When bugs are troublesome add some Paris green or other poison.—From Bulletin No. 279 of the New York Experiment Station.

GROWTH OF AGRICULTURE.

One of the most significant signs of the times is the rise of the agricultural industries into commanding position and the awakening of a general interest in rural subjects. Everyone seems to be aware that agriculture is making great progress. Now, all progress in the arts and industries rests on knowledge and the imparting of knowledge; in this case, it rests very largely on the activities of experiments stations and colleges. The work of these institutions, accumulating slowly and methodically, has leavened the lump. If there is an agricultural problem these institutions are to make the heaviest contribution toward solving it.

With all the awakened interest and the exploiting of individual instances, the townsman is not yet aware of the tremendous rise in the tone and efficiency of the entire agricultural industry, which may well be likened to the gradual elevation of a geological stratum of continental extent. At the same time, the agricultural population is retaining its old-time vigor, independence, and native philosophy. The student who enters this field will most assuredly not succeed unless he has good talents and efficient training and properly estimates the problem, but it is nevertheless perfectly evident not only that an educated man can succeed in agricultural arts but that in time this type of man will be the only one who can hope for the best results.—Prof. L. H. Bailey.

PLOWING.

Whenever an annual plowing will leave the surface bed in better condition to conserve water in the root layer, it has a value in addition to the better aeration which it secures. As to shallow or deep plowing that should be determined by the depth of the pulverized bed necessary for best conservation of moisture below, which varies in different soils. It is a mistake to disturb the roots below that point.

When writing advertisers mention Cultivator

Orange Orchards

3 Years Old, Will Pay Big Profits

Located in the Best Citrus Fruit Belt in California

$125.00 Cash per Acre

Balance in 3 Years

to secure a 10-acre orchard that will pay later on from $800.00 to $1000.00 net profit per year per acre.

Let us tell you how this can be done.

Absolute Security

for your investment and for large profits, is GUARANTEED in this the BEST ORANGE ORCHARD PROPOSITION ever offered. Your profits GUARANTEED by BOND and MORTGAGE on OTHER ORCHARDS of our own.

Only 200 acres will be sold in this way to advertise the tract of 3000 acres we are selling.

Frostless location, ABUNDANCE of cheap water, BEST CLIMATE AND SOIL in the whole State FOR ORANGES AND LEMONS.

Orchards 10 to 20 years old and clearing up to

$1,500 per Acre per Year

in this locality are proof positive of the value of our proposition.

Such an Opportunity

only comes once in a lifetime. Write or call NOW and let us

Show You.

We have the best proposition in the world for good, successful, responsible agents, who can SELL REAL ESTATE either on large salary or commission, or both, and we want the best representative obtainable in every city.

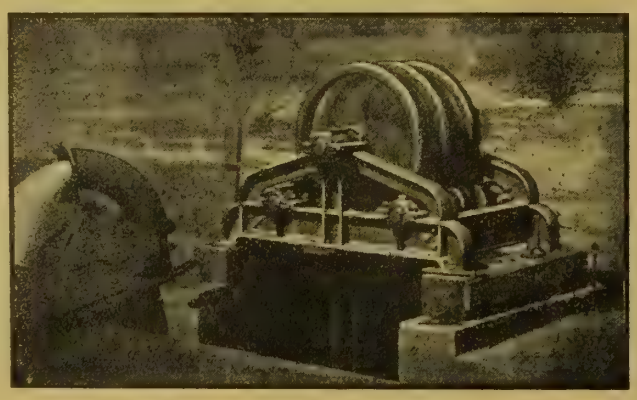
THIS MAY BE YOUR CHANCE.

It costs very little to write or interview us and LEARN of this UNPRECEDENTED chance to PROVIDE an EXCELLENT INCOME for the FUTURE, with COMPARATIVELY NO INVESTMENT of cash, and LITTLE TIME OR ATTENTION REQUIRED.

Lindcove Realty Co.

402 Pacific Electric Building, Los Angeles, Cal.
Home Phone F4824

Addison Double Plunger Pump Head



Direct Geared to Steam Engine

One of four pumps installed for Bisbee-Naco Water Co., Naco, Arizona

It will pay you to investigate the Addison before purchasing a pump. Send for Catalogue B.

Addison Pump Company

Phones: Home 91; Sunset, Black 1551 Cor. 1st and Cypress Sts., Pomona, Cal.

Confident that a trial will prove the superior merits of

West Coast Stock Food

Beyond question the best condition powder made.
We will send to new customers one 25-lb.

$3.00 Pail for $2.00

or one 50-lb. $5.75 double sack for $3.50, and will prepay the freight to any point west of the Rockies. Not more than 50 lbs. to each one, and we reserve the right to withdraw this offer without notice when we have received all the orders we care to fill at these very low prices.

We are presenting no cheap premiums nor offering any gaudily colored pictures, but we are making this strictly legitimate business offer for the purpose of inducing more to try it. We thus hope to add to our large number of steady customers. We are charging up the difference and the freight to our advertising account, feeling sure that a trial of the goods is the very best advertising.

There are no strings to this offer. Just send us your name, your postoffice address, the freight station to which you want the goods shipped, mention this paper, and we will do the rest. Send money order or check with your order, and if everything is not exactly as represented your money will be refunded. The First National Bank of this city, or Bradstreet's Agency, or any leading firm, can inform you as to our reliability. **WEST COAST STOCK FOOD** has for many years been a standard condition powder in this section. See our full page adv. in the March 7th issue of this paper, or send for circular with testimonials.

MANUFACTURED BY THE

West Coast Stock Food Co.

818 San Fernando St. (Through to Alameda) Los Angeles, Cal.

HONEY IN EUROPE.

Vice Consul Charles Karminski, of Seville, furnishes recently published statistics in relation to Europe's production of honey, which designates Spain as second in the supply of that product, the total number of her beehives being 1,090,000 and the quota of honey furnished by her nineteen thousand tons out to eighty thousand, the world's yield. Germany with two billion beehives, produced twenty thousand tons of honey, a larger quantity than all other countries, Austria, ranking third, produced eighteen thousand tons of honey, France ten thousand, Holland and Belgium less than two thousand five hundred [illegible], Russia and Denmark one thousand tons each.

"The head of the firm," said the superintendent, "insists upon our employing his son in this department and it's as much as we can do to keep him idle."

"Idle! You mean busy, don't you?"

"No, I don't! If we kept him busy it would keep three or four other men busy correcting his mistakes."—

White Rocks The best kind and the best of the kind. Eggs until further notice, 15 for $1.25 or $5.50 per 100.

White Plymouth Rock Ranch

J. T. Davis, Prop. POMONA, CAL.

When writing advertisers mention Cultivator

The Produce Markets

Los Angeles Markets

LOS ANGELES, Mar. 13, 1907.

Clear weather yesterday brought in a heavy supply of butter, cheese and eggs, as shown by the receipts posted on the board of the Los Angeles Produce Exchange this morning. The increased supply of these commodities did not affect the market sufficiently to change prices.

Butter has been so scarce during the last two days that large receipts could in no way weaken the butter market, for dealers who have been forced to go without butter during the shortage took all they could get to fill back orders.

Valley Creamery 67½
Coast, fy, ...60
Cooking 20

Cheese

Cal. Young American, per lb 20
California Anchor 19
Cal 3-lb. hand 21
Northern 17
Domestic Swiss 20
Imported Swiss 29

Eggs and Poultry

The egg market weakened slightly under the big shipment to the extent of dealers coming forward with more offerings around the official price than there was bid for, but they held out for the full prices.

Eggs, local, per doz. 20
Northern Candled 19
Fresh Eastern 18

The following are average prices which dealers pay to producers for live weight:

Hens, per lb. 15
Young Roosters, per lb. 20
Fryers 21
Broilers, per lb. 22
Old Roosters 8
Turkeys .....16@19
Geese .....15@16
Ducks .....15@16

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lb. 7.75
Prime Steers. 5.50
Heifers 4½
Calves, per lb 5
Sheep, ewes, per head 5.50
Lambs, per head 4.00
Wethers 5.50

Potatoes

Potatoes are again piling up. Receipts yesterday were over twenty-one cars which makes for the last two days thirty-four cars. This is about fourteen cars more than the estimated amount needed to meet consumption.

There were only a few potato dealers active in the market this morning, and consequently trading was slow, but it is hardly thought this was an indication of weakness or that there will be any declines as a result of today's heavy shipment, although a few more days with as heavy arrivals will in all probability set prices back to their low standing of about a week ago.

Salinas 2.50
Burbank, Local 2.25
Highland 2.25
Sweets. Yellow, per sack .....3.75@4.00
Colorado 2.05
Minnesota 2.00

Vegetables

The supply of fresh vegetables was not heavy today, but dealers had plenty left over from yesterday. This was all cleaned up today.

Asparagus, lb. .....10@12
Beets, per doz .....40@60
Bell Peppers, Green, lb 5
Cabbage, sack .....1.00@1.25
Chili Peppers, Green 30
Chili, Dried, per lb... .....13½
Cucumbers, per doz .....1.50@1.75
Cauliflower, per doz .....90@1.00
Carrots, per doz .....40@60
Celery, per doz. 40
Egg Plant, per lb 15
Garlic per lb 6
Green Onions, doz. bunches .....25@30
Lettuce, per crate .....50@1.00
Lima Beans, per lb .....7@8

No onions came into the market yesterday or the day before, which was a benefit to the market. Some fancy Nevada onions were offered at a strong price and unless there are more onions rolling this way than are now figured upon it is likely the dealer will receive his price within the next few days.

Onions, Aust. Brown, sk .....135@1.50
Onions Y. Danvers .....1.35@1.50
Parsnips, per doz .....35@50
Rhubarb, per lb. .....3@6
Radishes, per doz .....15@20
String Beans, per lb .....8@12
Sugar Peas, per lb. .....4@8
Turnips, doz bunches .....40@60
Tomatoes, per box .....75@1.25
Wax Beans, per lb .....16@18

Citrus Fruits

Lemons 2.00
Valencias .....1.50@2.00
Navels .....1.25@1.50
Grapefruit Seedless .....2.00@2.50
Grapefruit seedlinggs .....1.25@1.50

Fresh Fruits

Apples, Bellefluer, per box .....1.25@1.40
Apples, Ben Davis .....1.35@1.40
Strawberries, ...12@17

Dried Fruits

Evap. Apples, fancy, per lb 9
Apricots 18
Peaches. 12
Pears .....12@13
Prunes, fy, ...5@8

Beans, Dried

Limas, No. 1, per cwt 4.75
Pink No. 1 .....2.65@2.75
Lady Washington .....2.90@3.00
Small White .....3.25@3.40
Black Eyes .....5.50@6.00
Garvanzas .....5.50@6.00

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb. cans, lb. 7
Light Amber .....6½@7
Comb, water white, 1-lb. fms 16
Light Amber 11

Nuts

Almonds, new, per lb.....19@20
Peanuts, Virginia 7
Peanuts, California 6½
Walnuts, No. 1, S. S. .....14@15

Hay

Barley, No 1 .....15.50@16.00
Barley, No 2 .....11.00@12.00
Alfalfa, Local, per ton .....14.00@16.00
Plain Oat Hay, No. 1.....18.00@20.00
Plain Oat Hay No. 2. .....9.00@15.00
Wheat No. 1 .....14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, No. 1, per cwt.....1.40
Barley (to producer).....1.00@1.05
Rolled Barley 1.30
Corn, per cwt.....1.40
Cracked Corn 1.45
Feed Corn Meal 1.45
Shorts 1.45
Bran 1.30
Oil Cake Meal 2.75
Cocoanut Meal 1.50

San Francisco Markets

SAN FRANCISCO, March 12, 1907.

Butter.

There were very few changes in prices on Dairy Products yesterday and the market was fairly steady, particularly on the better grades of butter. Eggs were in heavy supply but the quoted figures were said to be firmly sustained.

California, ex, per lb. 35
California, firsts 33
California seconds 30
Packing Stock 23

Cheese

New California, fancy 16
Cal. Young American, fancy 16

Eggs and Poultry

Receipt of Poultry were comparatively light and supplies of desirable stock were steady.

Fresh Ranch Eggs 20
Eggs, first, per dozen 19
Hens, per doz., small .....5.00@5.50
Hens, large .....600@7.50
Young Roosters, large .....7.00@9.00
Young Roosters, small .....4.50@5.50
Old Roosters.....4.00@4.50
Fryers, per doz .....6.50@7.50
Broilers, per doz .....4.00@6.50
Ducks, young .....6.00@8.00
Geese; per pair .....2.00@3.00
Turkeys, per lb .....16@19

Live Stock

Steers. No. 1 .....9@9½
No. 1 Cows and Heifers .....6½@7
Hogs, 80 to 130 lbs .....8@8½
Hogs, 250 to 350 lbs. 8
Calves, per lb .....5@5½
Lambs, yearlings .....6½@8

Potatoes

Oregon Burbank .....1.45@1.75
Salinas Burbanks, ctl .....1.50@2.00
Rivers .....1.60@1.80
Sweet Potatoes. ctl .....2.75@3.00

Vegetables

Supplies of Asparagus were extensive and sales quite large. Rhubarb also met with a good inquiry. Other Vegetables were inactive.

Asparagus .....4@8
Cucumbers, per doz. .....1.00@1.25
Chili Peppers, Green lb .....15@25
Egg plant per box .....3.00@3.50
Green Peas, per lb .....6@12
Squash, crates. .....65@90
Onions, Red, per sack .....75@1.00
Onions, Yellow .....75@1.00
Peppers, Green Bell 25
Rhubarb, per box .....1@1.75
Squash, crate .....65@85
String beans .....15@17
Tomatoes, Mexican .....1.75@2.50
Wax Beans .....15@17

Citrus Fruits

Six cars of Oranges came to hand yesterday and although supplies are rather excessive, prices were held fairly steady. Deciduous Fruits were slow and neglected.

Lemons	.75@2.50
Navels	1.00@2.00
Seedlings	1.50
Grapefruit, seedlings	1.00@1.50
Grapefruit, seedless	2.00@3.00
Limes	3.50@4.00

Fresh Fruits

Apples, fancy, per box	1.50@2.50
Apples, common, per box	.75@1.00
Pears, Winter Nelis	1.75@2.00
Prunes, per box	.60@85

Dried Fruits

Evaporated Apples continue very quiet and prices are no better than nominal in the absence of business.

Apples (evap.)	7@8
Apricots, per lb	16@20
Figs, white	2½@4
Muscatels (loose)	7@8
Prunes	2@2½
Peaches	10@12½
Raisins, seeded (1906)	8½@10
Thompson, unbleached	7½
Thompson, bleached	9@11

Beans and Seeds

The demand for Beans continues fairly steady, with the preference still in favor of the colored varieties.

Limas, No. 1	4.10@4.15
Pink	2.10@2.25
Large White	2.00@2.35
Small White	2.80@2.95
Black Eyes	4.50@4.65
Red Kidneys	3.40@3.75
Bayo	2.30@2.50

Hops

Desirable grades of California, 1906 crop, future delivery, 10@12 cents per lb, with occasional sales at 12½ cents.

Nuts

Almonds new	14@18
Peanuts, Viginia	6½
Peanuts, California	5½@6
Walnuts	15@16

Honey

Clear White Comb	16½
Amber	14@15
Extracted	5½@7

Hay

Hay arrivals for last week amounted to 2644 tons.

This shows very much lighter receipts than we have had for some time. The railroad companies are doing very little for the market. There is an embargo placed on shipments to San Francisco, and this coupled with the fact that Hay tributary to the water is about cleaned up, makes the situation an extremely serious one.

We are apparently in the hands of the railroad companies, as we have been all season, but it seems to be impossible to make any change in the situation. Shippers in every direction are clamoring for transportation. Every possible influence has been brought to bear upon the railroads, but without avail.

Under these conditions our market continues exceedingly strong and prices have advanced a trifle. There is practically no choice as to grade or quality, all kinds of Hay being picked up as rapidly as they come in.

Alfalfa alone shows signs of weakness, there being an abundant supply of that by reason of the fact that the demand has greatly diminished.

Straw is scarce and sells at high figures. This is because all available transportation is used for Hay and cannot be taken for Straw.

Alfala, local	8.00@12.00
Oat	15.00@18.00
Wheat, No 1	18.00@20.00
Wheat, No. 2	13.00@16.00

Grain

Wheat No. 1	1.27@1.30
Barley No. 1	1.15@1.17
Corn, small yellow	1.50@1.55
Corn, yellow	1.27@1.30
Oats, White	1.42@1.60
Oats, Red	1.30@1.60
Ground Barley, per ton	24.50@25.50
Bran per ton	21.50@22.50
Straw, per bale	.45@75
Feed Corn Meal, per ton	31.00
Cracked Corn per ton	32.00
Oil Cake Meal, per ton	38.00
Cocoanut Cake, per ton	27.00
Calaifa Meal, per ton	21.00
Mealfalfa, per ton	21.00

Citrus Market

New York Market.

March 12.—The market continued very strong, as it has been for the past week. All prices have been very satisfactory to the California shippers. Seventeen carload or oranges and one carload of lemons sold today.

NAVELS—	AV.
Criterion, o r Penn Ft Co	$2.75
Wolf st Penn Ft Co	2.65
Orchard T. I. National Orange Co	3.50
Standard st National Orange Co	3.20
Independent fy Highland Dist.	2.85
Independent ch Highland Dist	2.50
Slover Mountain o r Colton Dist	2.70
Slover Mountain fy Colton Dist	2.70
Orange P fy King Ft Co	2.80
Orchard ch King Ft Co	2.80
West Highland fy Highland Dist	2.55
Independent fy Highland Dist	3.05
Independent ch Highland Dist	3.00
Signal ex fy Stewart Ft Co	2.85
Mountain Lion fy F H Speich & Co	2.75
Signet ex fy O G C A	3.20
Colonel ex ch O G C A	3.05
La Mesa, ex ch Riverside Ex	3.10
Golden Rule, ex ch Riverside Ex	3.10
Blue Globe ex fy Riverside Ex	3.10
Pointer, ex ch A C G Ft Ex	2.50
Blue Globe, ex fy, Riverside Ft Ex	2.95
Quail ex ch O K Ft Ex	2.30
Anchor	3.15
NAVELENCIAS	AV.
Squirrel, fy, A H Ft Ex	
LEMONS—	AV.
Rossmoyne, fy E M Ross	2.65
Rossmoyne st E M Ross	2.45
Rossmoyne ch E M Ross	2.45
GRAPEFRUIT—	AV.
Signet ½ ex fy O G C A	1.65
Fayette fy Penn Ft Co	1.50
Squirrel fy A H Ft Ex	1.90
Stag ex fy, A C G Ft Ex	2.15
Orchard o r National Orange Co	2.00
Bear, ex fy O K Ft Ex	1.90
Quail ex ch O K Ft Ex	1.60
RUBY BLOODS—	AV.
Fayette ½ fy Penn Ft Co	1.35
Squirrel (whole) A H Ft Ex	3.30
Squirrel fy A H Ft Ex	1.55
Palm Tree (whole) A H Ft Ex	3.10

March 11.— There was a heavy snow storm yesterday which checked demand somewhat, but the market is very strong and higher on all sizes. Weather favorable today. Twenty-four carloads oranges and two carloads lemons sold today.

NAVELS—	AV.
Gypsy Queen, ex fy M & G	$2.40
Carnation ex ch M & G	2.25
Tropical Queen M & G	2.30
Dos Palmos, ex ch S. M. G. Assn	2.50
El Toreador st S. M. G. Assn	2.35
Orchard o r National Orange Co	3.45
Standard st National Orange Co	3.20
Independent fy Highland Dist.	2.60
Independent ch Highland Dist	2.55
Old Mission fy C C Chapman	2.95
Old Mission ch C. C. Chapman	2.65
Golden Eagle st C. C. Chapman	2.40
Alpha ex fy Riverside Ft Co	3.25
Elk ex ch Riverside Ft Co	3.10
Peacock, ex ch Worthley A. Strong	2.10
Monte Vista	2.75
Monte Vista ch	2.70
Standard st	2.30
Criterion o r Penn Ft Co	2.75
Wolf st Penn Ft Co	2.85
Signet, Thompson's Imp. O G C A	2.90
Colonel ex ch O G C A	2.60
Truth fy F. H. Speich & Co	2.35
La Paloma ex ch F. H. Speich & Co	2.35
Foothill	2.45
Signet ex fy O G C A	3.15
Colonel Thompson's Imp O G C A	2.75
Sweetheart ex fy Highgrove Ft Ex	3.10
Eagle ex ch Highgrove Ex	2.65
Yankee Doodle Highgrove Ft Ex	2.95
Golden Orange	3.20
La Mesa, ex fy Riverside Ft Ex	3.05
Golden st Riverside Ft Ex	2.50
Squirrel, fy Arlington Hts Ft Ex	2.50
Blue Globe ex ch Riverside Ft Ex	3.05
Iris ex fy D M Ft Ex	2.40
Violet ex ch D M Ft Ex	2.25
Alhambra fy Semi-Tropic Ft Ex	2.30
Don Quixote ch Semi Tropic Ft Ex	2.25
Red C. ch Covina Ft Ex	2.40
Cougar st Covina Ft Ex	2.80
Anchor	3.00
Clover ex ch Redlands O G A	2.85
Signal ex fy Stewart Ft Co	2.65
Pico st Semi-Tropic Ft Ex	2.40

Seedlings—Anchor $2.70. Tangerines (halves)—Gypsy Queen, $2 05; Squirrel, $1.80; Palm Tree, $1.60. Manderines—Orchard, $1.60. Grapefruit—Squirrel, $2.45; halves. Signet, $1.60. Malta Bloods—Old Mission, $3.25; Golden Eagle, $3.05. Lemons—Corwin's, extra fancy, $2.85; Protection, $2.20; Buckeye, $2.10; Standard, $1.95; Anchor, $2.30.

Cleveland Market.

March, 11.—The market is strong on navels. Five cars sold. Weather favorable.

NAVELS—	AV.
Rebecca ex ch R H Redlands Jct	$2.45
Brook st R H Redlands Jct.	2.15
Criterion o r Penn Ft Co	2.75
Mountain Lion fy F H Speich & Co	2.35
Our Popular ex ch F H Speich Co	2.20
Herald, ex ch W American Ft Co	2.55

Boston Market.

BOSTON, March 11.—The market is steady on good fruit. Thirty-nine carloads sold today. Twenty on track.

NAVELS	AV.
Sunshine f Orange Growers' C A	$3.30
Gavilan f F H Speich & Co	2.85
Rose ex f Redlands O G A	2.80
Glover ex ch Redlands O G A	2.40
Highlander ex f Highland F G A	2.55
Carnation ex ch Moulton & Greene	2.50
Poinsettia f Cal Citrus Union	2.50
Buena Vista	2.35
Cactus ex ch Highland F G A	2.40
Buena Vista	2.15
Buena st Benchley Ft Co.	1.60
Buena st Benchley Ft Co	1.55
I X L ex ch Benchley Ft Co	1.55
Tiger f S B Ex Colton	2.75
Quail ex ch O K Ex Upland	2.45
Justrite Q C Ex Corona	2.45
Jamison Q C Ex Corona	2.75
Cosmos f S B Ex Yerkes	2.50
Golden Flower Redlands O G A	2.95
Golden Flower Redlands O G A	2.60
W Highlands or r Highland Dist	2.60
W Highland f Highland Dist	2.35
Slover Mountain Colton Dist	2.55
W Highland st Highland Dist	2.05
Triumph Cal Citrus Union	2.45
Excelsior ch Cal Citrus Union	2.40
Wildflower ex ch Cal Citrus Union	2.00
Lilac ch Cal Citrus Union	2.00
Flamingo ex ch Cal Citrus Union	1.85
Mayflower Richardson	1.80
Pilot Johnson La Mesa	2.20
Golden Rule ex ch Riverside	2.75
Uucle Sam ex ch Riverside	2.75
Fiesta ex ch Riverside Ex	2.55
Swan f R H Ex	2.65
C S O st C B Ex Yerkes	2.25
LEMONS—	
Choice ch T C Ex Lemon Co	2.30
Independent f Highland Dist	4.00
Standard st T C Lemon Cove	2.45
Independent ch Highland Dist	3.50
Punch (g f) f Semi Trop Ex Colg've	1.80

Cincinnati Market.

CINCINNATI, March 11.—The market is advancing and the weather is favorable. Four cars on tracks.

NAVELS	AV
Uncle Sam ex f Riv'de Ex Pach.	2.40
Fiesta ex ch Riv'de Ex Pachappa	2.50
Coyote ex ch O K Ex Upland	2.15
El Toro	2.25
Wildflower ex ch Cal Citrus Union	2.05
LEMONS—	
Select ch S A Ex San Dimas	3.15
Greyhound ch S A Ex San Dimas	3.05

Pittsburg Market.

PITTSBURG, March 11.—The market is very strong and is advancing. Cold and snowing. Seven carloads of oranges and one of lemons sold today.

NAVELS—	AV
Orchard or r Natl Orange Co	2.75
Standard st Natl Orange Co	2.35
Highlander ex f Highland F G A	2.55
Cactus ex ch Highland F G A	2.50
Cal Orange st Riverside Ex	2.25
Golden st Riverside Ex	2.35
Redlands' Best Bryn Mawr F G A	2.80
Redlands' Pride Bryn Mawr F G A	2.75
Kingmaker f F B Devine	2.00
Amnan	1.65
Pointer ex ch A C G Lateen Spur	1.55
LEMONS—	
Standard st Chas Monike	2.65

St. Louis Market.

ST. LOUIS, March 11.—The market is strong on both oranges and lemons. The weather is favorable. Seven carloads sold and five on tracks.

NAVELS—	AV
Golden Flower Redlands G O A	2.65
Golden Gate ex ch Redlands G O A	2.50
Planet ch S S Ex Orange	2.25
SS ch S S Ex Orange	2.25
Searchlight st S S Ex Orange	2.40
Mocker or r Spence Ft Co	2.30
Golden Rule ex ch Riverside Ex	2.85
Golden st Riverside Ex	2.60
LEMONS—	
Club ch S T Ocean Park	3.30
Punch S T Ocean Park	4.00
Lemonade st S T Ocean Park	2.95

Philadelphia Market.

PHILADELPHIA, March 11.—Prices are low on account of condition of fruit. The weather is cool. Twenty-one carloads of navels and 1000 boxes of Jamaicas sold today; four carloads of Floridas.

NAVELS—	AV.
Producers, ex fy Producers O Co.	$2.85
Aloha, ex ch Producers O Co	2.70
Cactus ex ch Highland F G A	2.40
R. Keystone fy King Ft Co	2.35
R. Keystone, ch King Ft Co	2.35
R. Keystone fy King Ft Co.	2.30
R. Keystone ch King Ft Co	2.00
Pyramid o r Strachan Ft Co	2.25
Papoose ch Strachan Ft Co	2.15
Fandango st Orange Pra. Assn	2.20
Native Sons, st King Ft Co.	2.15
Salt Lake st King Ft Co	1.90
Gold Coin ex ch C C U	1.75
Lilac ch C C U	1.70
Stag ex fy A C G Lateen Spur	2.00
Pointer ex ch A C G Lateen Spur	1.60
Hunter st A C G Lateen Spur	1.80
Hunter st A C G Ex Glendora	2.45
Pointer ex ch A C G Ex Glendora	2.45
Whittier ex ch S T Ex Whittier	1.85
Pico st S T Ex Whittier	1.90
Hunter st A C G Charter Oak	2.15
Redlands' Best Bryn Mawr Assn	2.55
Redlands' Pride Bryn Mawr Assn	2.40
Carnation, ex ch M & G	2.40
Sunshine fy O G C A	2.35
Highlander, ex fy Highland F G A	2.30
Sunrise J F Bowen	2.25
Clover, ex ch Redlands O G A	2.30
Lordsburg o r Lordsburg Dist.	2.15
La Belle st Bryn Mawr Assn	2.30
Lordsburg st Lordsburg Dist	2.10
Topaz ex ch C C U	1.85
Topaz ex ch C C U	1.80
Amethyst st C C U	1.75
Golden Rule ex ch Riverside Ex	2.50
Coyote ex ch O K Ex Upland	2.15
Coyote ex ch O K Ex Upland	2.55
Blue Jay st O K Ex Upland	2.10
Quail ex ch O K Ex Narod	2.20
Ben Hur ex ch R H Ex Redlands	2.30
Newsboy ch R. H. Ex Redlands	2.15
Pointer ex ch A C G Charter Oak	2.10
Hunter, Thompson's Imp. A C G	2.10

CITRUS FRUIT SHIPMENTS.

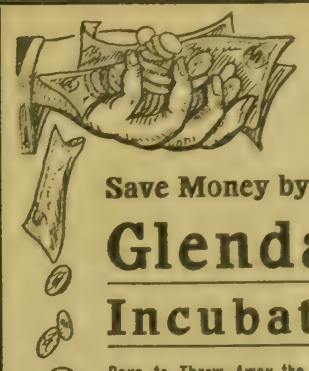
LOS ANGELES, March 11—175 carloads of oranges; 16 carloads of lemons.

Total to date this season, 9348 cars of which 1072 cars are lemons.

Total to same date last season, 11,667 cars of which 1302 were lemons.

IT'S PENNY WISE.

Policy to set out a good tree, costing good money and then let the sun burn the bark or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Manufacturing Company, 2124 Willow St., Los Angeles.



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Household Department

OUR OWN FOUR WALLS.

The storm and night are on the waste,
Wild through the wind the herdsman calls,
As fast on willing nag I haste
Home to my own four walls.

Black, tossing clouds, with scarce a glimmer,
Envelope earth like sevenfold palls;
But wifekin watches, coffee pot doth simmer
Home in my own four walls.

A home and wife I too have got,
A hearth to blaze whate'er befalls;
What needs a man that I have not
Within my own four walls.

King George has palaces of pride,
And armed grooms must ward those halls;
With one stout bolt I safe abide,
Within my own four walls.

Not all his men may sever this;
It yields to friends,' not monarchs,' calls;
My whinstone house my castle is,
I have my own four walls.

When fools or knaves do make a rout
With gigmen, dinners, balls, cabals.
I turn my back and shut them out—
These are my own four walls.

The moorland house, though rude it be,
May stand the brunt when prouder falls;
'Twill screen my wife, my books and me
All in my own four walls.

—Thos. Carlyle.

WON BY A NOSE.

DR CARLING reached into the drawer and drew out a large envelope.

The action reminded him of a pamphlet he had promised Darnton, so he took out another envelope and slipped into it the brochure on scarless surgery which was attracting so much comment.

Then the telephone bell rang, and he picked up the receiver to answer the call before addressing the envelopes.

Being a busy practitioner, the incident was not brought to mind again until he encountered Darnton coming down the hospital steps the next morning.

"I received your book, doctor," the latter chuckled. "Something of a departure, isn't it?"

"It's a reprint from my paper in the Journal of Surgery," he answered carelessly. "You asked for one the other day, you will remember."

Darnton drew it from his pocket. "I think you made a mistake," he smiled, as he handed it to the other man.

Carling glanced at the title and gasped. This little volume was a paper-bound copy of some poetry concerning which Miss Sarah Longwood had asked.

He had sent it with a little note saying that he hoped that the little volume would interest her. He had put the letter in the wrong envelope, and it had gone to her along with his brochure.

In this he had specially marked the report of a case in which he had reduced a hook nose to a respectable Roman outline without leaving a scar.

It was the case in which Darnton had expressed interest, and to send it to Miss Longwood of all persons; she who was the aunt and guardian of the girl he loved, and the possessor of a nose of gigantic proportions!

That settled his chances with Nettie. Probably she would be as angry as her aunt, and neither could be convinced that the whole thing was not a studied insult.

There was only one thing to be done. He must at least offer an apology. It was late in the afternoon before his rounds were finished and he could call at the Longwoods'.

With a nervous perspiration beading his face, he rang the bell and faced the butler.

"Miss Nettie is not at home," the servant said pompously, and Carling's heart sank. She would not even see him, and he must trust to the cold and formal written explanation.

"Miss Longwood is at home and desired to be informed if you called," went on the butler. Carling started. He had hoped to make Nettie his intermediary.

"Ask Miss Longwood if she will see me," he said, as he passed into the reception-room.

The butler returned to say that she would be down immediately, and Carling fidgeted through five dreary minutes, every sixty seconds of which seemed an hour.

At last she entered, tall, imposing and severe. Carling sprang to his feet.

"Nettie is out, doctor," she said in greeting. "But I wanted to see you a moment about that book. It was very thoughtful of you."

Carling stared. Was there some chance that a second blunder had been made somehow? Miss Longwood motioned him to a seat and took a chair near him.

"A great many persons would have lacked the courage to send it," she said. "It shows your thoughtfulness that you took the chance of giving offense. How did you know that I was not proud of the Longwood nose?"

"I thought—" he stammered. He could not complete the sentence and explain that he thought he was sending some poems.

"I am sorry that you did not speak of it before," she went on. "I know that it is ridiculous for an old woman like me to care whether her nose is pretty or not, but ever since I was a child I have hated it. I did not know that an operation could be performed with the certainty that there would be no scar."

"It is a new treatment," he explained: "A matter of dressing. I have had a number of similar cases since that paper was written, but—" He wanted to disclaim credit, but the old lady would not have it.

"Don't say 'but,'" she ordered sharply. "I want you to arrange to reduce my disfigurement just as soon as you can, and I cannot tell you how grateful I am to you."

Carling walked from the room like a man in a daze. It was a simple enough matter to perform the operation, and when the wound was healed it was a very different Miss Longwood who presided at the wedding of her niece.

"That's all over," said the new Mrs. Carling, as the carriage rolled away from the house. "For a time I was afraid there was no hope. Auntie was determined that I should marry Bob Storms, but your lucky suggestion

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about surgery carried the day. However did you come to think of sending her that article?"

"I didn't," he explained. "It was all a mistake."

"Don't ever tell her," pleaded Nettie. "Let her keep thinking that"—

"I won—by a nose," laughed her husband.—Irving Boice.

ORANGE MARMALADE.

I am trying to study up a plan to turn oranges and other products of the ranch into money and to this end I have been experimenting with orange marmalade, until I am able to produce an article of fine quality in experimental quantities.

I am trying to find out if such products put up in glass and of such quality that they will stand any test for purity, can be prepared and sold and if a financial success can be made of the enterprise and to this end may I trouble you to answer these inquiries:

1. What per cent. of profit between the actual cost of the product and the wholesale selling price is required to make a financial success?

2. Can the small producer survive the competition of the larger and well established concerns?

3. Can a success be made of sticking to one line, such as orange marmalade, or is there an advantage in having a diversity of products?

4. Do you think there is a good demand for orange marmalade?

5. Is the best market for such goods on the Pacific Coast and will the freight rates East, whether in carload lots or in small quantities, eat up the profit of shipping East?—G. C. R., Tustin.

Orange marmalade has to be made in small lots, that is each individual lot is small in quantity. The amount in each container is limited to a small lot. A couple of hundred eight quart granite-ware pans will not hold a large quantity as jam making goes, for it has to remain in the pans and they are not ready the second day to go into use. With other fruits, the large copper steam cookers can be used and the matter pushed along rapidly. Cane sugar is necessary if a commercial article is to be produced as the transportation companies and the commission men contract all calls for it.

The next thing is to test your make by the market standard. To do this, buy a number of the best makes and take small plain water tumblers, put the jam into them, numbering the jars, and put a sample of your own jam among the number. Invite in a number of friends, men and women, and give them plain crackers, and have each one sample the glasses of jam and write down the number of the best. This may seem to you foolishness, but it is the best way to reach a decision as to the popular taste. One may make an article vastly superior to the commercial article and find no sale, for people are set in their tastes. After you have found out what you are at in the making, then try and see if you have it down fine enough to make a uniform article, for if you slip up the least it will be to sacrifice the trade already gained. Seal up carefully a jar out of the batch and keep it in sight to work to as a sample in color, texture and flavor.

1st. The large canneries of the state count that if they make ten cents on a case on a pack of a hundred thousand that it is profitable.

In a small way, I have asked several old canners, they tell me you should have 25 per cent. for yourself, jobber 20 per cent, and retailer 20 per cent. You see this runs up to 65 per cent. above cost.

2nd. Yes, if in a settled community and he is satisfied with a limited business. Madame Crichnor of San Francisco made a comfortable living for herself and family for years in selling jams. The only jam she made that was equal to the domestic manufacture was the orange.

3rd. I should begin with one product and when it was a good seller add others to it, making quality stand for more than quantity.

4th. I never had difficulty in disposing of all I made right in Fresno, and surrounding villages. The manufacturer must create the demand by advertising. I always aimed to put up a number of small sample jars with the exact label of the other larger jars, and then send a man or girl around to the consumer. In a small place take two or three houses in a block and give samples. The women will tell each other. After a week follow around to these houses with a supply in the buggy and sell as much as you can. Take the names and addresses of each customer. When you have a reasonable number of customers go to the grocers and ask them to take the articles, showing them the list of consumers, and agreeing to carry so much advertisement in the local paper of the jam.

5th. I should be very slow at trying to reach a trade in the east, for if the matter is not a large one the commission men in the east do not take a great interest. You are far away and at first are likely to be fleeced by unprincipled men there. It is easy for them to refuse a shipment on some little clause or fault, they then offer to arbitrate and you at a distance are naturally less important to the arbitrators than the friendship of the men who are rejecting the fruit. You stand to lose nearly every time. While the matter is being arbitrated, if the price suddenly goes up, above the price the goods are purchased for, the wires are hot with apologies and the goods are accepted at once. It would take good business energy and a large sum of money to create demands for carloads of orange marmalade. The secret of success is in pushing hard and backing it up with a good keeping article.—M. E. S.

TYPES OF FARM ANIMALS.

Charles S. Plumb, professor of animal husbandry in the college of agricultural of the Ohio state university, has issued a most valuable work on types and breeds of farm animals, which supplies the need for an up-to-date discussion of the several types and breeds of horses, asses, mules, cattle, sheep, goats, and swine. This volume describes the commonly accepted types, as for example, draft or speed type of horse, dairy type of cattle, and bacon type of swine. It includes discussions of the original habitat, of breed development, European history, special American history, work of pioneer breeders, famous animals, families or tribes, breed characteristics, breed and individual records, as, for example, milk of cows, butter, or speed of horses, etc. Many noteworthy records are given and numerous illustrations of famous animals shown. A comprehensive table of contents and an index form an important part of the book.

The work is primarily intended for students in agricultural colleges and universities. Breeders and feeders of animals, however, will find this volume a valuable reference work.

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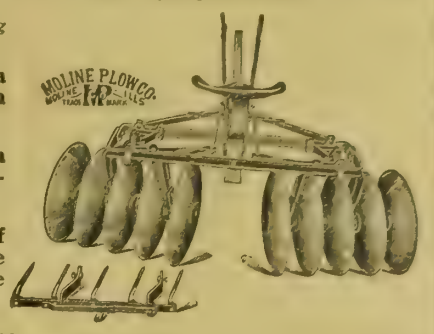

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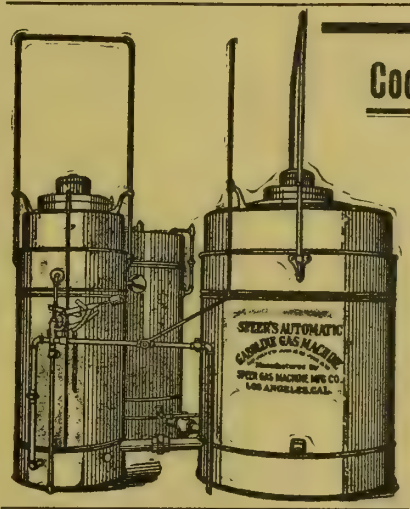

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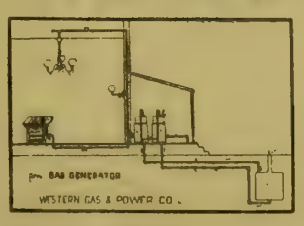

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Bees and Their Care

VALUE OF HONEY.

Some fear the honey they will buy may be adulterated; others think honey is not good food—"it is too heating," or some other dictum. There are signs, however, that honey will soon come into its own again, and rank at the top of the foods adapted by nature to the use of mankind.

Among physiologists honey is regarded as a predigested food the same as milk and eggs. Not many persons are aware of this. But bees really prepare honey—they do not gather it. Bees consume the nectar of flowers and produce therefrom a food for themselves and their young, which we call honey. It is really, then, predigested, requiring no further preparation to make it a perfect food. This explains why it was so popular with the ancient doctors. We now know that careful attention to diet and good hygiene form more than half the battle in nursing the sick. Honey also possesses a medicinal value probably due to the presence of minute quantities of the essence of flowers. Therefore the value of honey in medicine depends on the source of the nectar from which it was made. Basswood honey is supposed by many to be good for those suffering from consumption. Onion honey is said to be useful in colds. But this as it may, we are absolutely sure honey is a very fine food, and where there is a craving for sweets in children honey forms undoubtedly the best means of satisfying this natural longing. Honey is supposed to be fattening, but it is different from sugar in this respect, for sugar when injected into the human stomach has to undergo a process of 'inversion," whereas honey goes on to the intestines without further elaboration. This explains why a person suffering from diabetes must abstain from eating sugar, and yet may eat honey with impunity.

Some are afraid to buy honey, fearing they will get something which has been adulterated. Whatever may have been the case formerly, this is not the case now, though there is still some adulteration practiced, particularly in states without pure-food laws.

Honey in the comb is always pure and if one likes this kind of honey, it is perfectly easy to be always certain that it is absolutely pure. Our modern scientists are very able and clever, but none has been able to imitate even approximately the exquisite handiwork of the bees and we are sure they never will.

BAD BEE MANAGEMENT.

A large part of Farm and Ranch readers keep bees and a large part of its readers have let the bees take care of themselves. The latter class should get out of the old box gums, get the movable frame hive and transfer their bees and improve their stock and begin to derive some revenue from them. Sometime ago I was on the market square here in Waco, selling honey, and a certain farmer was there every morning with his fruit and melons, and seeing the writer there every morning with honey, came up and said: "Phillips, I want to know how you always have honey to sell and I, with forty gums of bees, can't get enough honey for my family to eat?" I said: "What kind of hives have you?" He said: "Just a square gum." I said: "Well, do you pay any attention to them?" and he answered: "No I hive them and let them go." Then I said: "Well, suppose you would do your melons and orchards that way, how many peaches or melons would you bring to market?" "None." Just so with bees.

The above illustrates the way that many farmers keep bees, and Farm and Ranch reaches a very large class of these. The farmer's wife could take charge of the bees and devote a little study to them and have a few bees and get practical knowledge, and would soon find that her bees would bring her more money than her chickens with less labor and a great deal more pleasure. Of course, you must understand how to manage them and study your honey plants to know just when they will come into bloom, so as to have the bees built up to strong colonies and keep them from swarming. The writer had only one swarm this year out of twenty-five colonies, and we had them in ten-frame hives, and two and three stories high. Such colonies always gather lots of surplus honey.—Farm and Ranch.

"Ever try an automobile, Judge?" said a friend. "No," replied the Judge "but I've tried a lot of people who have."

TWO PIANOS! CASH! BIG PRIZES FREE!

If this chart gets destroyed another printed upon heavy paper will be sent upon receipt of 2c stamp for postage.

CAN YOU COUNT THESE DOTS?
SUCESSFUL FARMING WILL GIVE TO THOSE WHO CAN COUNT THE DOTS IN THE PIANO CORRECTLY OR NEAREST CORRECTLY, THE FOLLOWING LIST OF PRIZES: CAN YOU DO IT?

Two Elegant Pianos, one to a lady and one to a gentleman.
2nd. Two Hundred Dollars Cash.
3rd. One Hundred Dollars Cash.
4th. Fifty Dollars Cash.
5th. Twenty-five Dollars Cash.
Next 5. Ten Dollars Each.
Next 10. Five Dollars Each.
Next 25. Two Dollars Each.

CONDITIONS: 50 cents pays for one year and one count. $1.00 pays for two years and three counts. You get $50 extra if you have three counts. It will pay you to have three. See conditions below.

DON'T DELAY!
IF YOU WANT A PIANO OR OTHER PRIZES FREE SEND YOUR COUNTS AT ONCE

PRIZE WINNERS IN PAST CONTESTS

A Piano for $1.00. Surely people may enter your contests knowing that they will receive fair treatment. How glad I was to win a piano for so small an amount and wholly unexpected. The paper alone is worth all I paid.
MRS. L. W. NOTT, Marion, Ia.

He Won a Piano. Refer people to me if they want to know whether you are honest. I got a piano for a prize and never heard of you until I answered your ad. Your paper is worth twice the subscription price. W. C. ELLIOTT, Audubon, Iowa.

$100.00 Prize. I got my $100 and it was the easiest I ever earned. The dots are hard to count but I know the prizes go to those who win them fairly.
AMY R. BARNES, Van Horn, Iowa.

Won $350 Cash. To Whom It May Concern: I won grand prize of $350 Cash in last contest. I was much surprised. I want to vouch as to Successful Farming's fairness to any and everybody. JOHN A. GOODWIN, Richmond, Va.

$50.00 for Canada. Way up here in Canada I won $50. I never knew there was such a paper until I answered ad, now I will never be without it again.
MISS E. FORNIER, Mantane, Quebec

Won a Piano. I received the elegant piano which I won in your recent contest, and all was perfectly grand. I am recommending you to all my friends and you are at liberty to use my name as reference any time you wish.
ISAAC SHOTWELL, Rockland, Ohio.

A PIANO

MRS. L. W. NOTT, Marion, Iowa.

A PIANO

W. C. ELLIOTT, Audubon, Ia.

$50.00 CASH

EUGENIE FOURNIER, Matane, Quebec.

OTHERS WHO HAVE WON:

Pianos—Myra A. Fursman, Panola, Ill. E. L. Jones, 82 Cottage Ave., Ansonia, Conn. Mr. Libbie Greulick, St. Paul. Minn. W. S. Keever, 817 Freeman St., Cincinnati, O. J. Gemachlich, Kensington, Kan. Edith Hutchinson, Leonard. North Dakota.

$100 Eva I. Buckner, Fredonia, Kas. C. S. Wyman, Vinton, Iowa. E. M. Hall, Montrose, Mo. J. W. Smith, Rome, Okla.

$50 S. Irving Steyer, 225 E. Balt. Baltimore, Md. L. F. Stinson, Arcata, Calif. A. J. Perdue, Altoona, Ia. Albert Peterson, Holdrege, Neb. Chas. McBride, Peoria, Ill. Jos. Unser, Belleview, O. Mrs. D. H. Stoner, Granger, Ia.

THESE ARE BUT A FEW OF MANY. WE COULD GIVE A LIST OF HUNDREDS IF WE HAD SPACE. YOU MIGHT AS WELL BE A WINNER IF YOU GO AT IT AT ONCE.

CONDITIONS—50 cents pays for a year's subscription to SUCCESSFUL FARMING and one count; $1.00 pays for two years and three counts and makes you eligible for the special $50.00 prizes given to winners of 1st prizes if they have three counts. See below.

AWARDS will be made as follows—The person giving correct or nearest correct count will get first prize. Next nearest second, etc.

$50 PRIZES—We believe everybody should have three counts so they can have one each side of what they think is correct to be more sure to hit it. To encourage this we will give $50.00 extra to winners of 1st prizes if they have three counts. Remember if you have one count you get piano only, but if you have three counts you get $50 extra.

TIME PRIZES—$25.00 Extra. We feel early counters should be rewarded and we will give $25.00 to the person sending best answers by Feb. 28th.

OUR RESPONSIBILITY—We are a responsible business house, and every prize must be and will be paid as stated. We refer to Iowa National Bank, Central State Bank, German Savings Bank; in fact any Bank, Express Company, business house or individual in Des Moines, as well as Dun or Bradstreets Agency, or the publisher of this paper.

JUDGES—We have wholly disinterested judges to award prizes. Here is what they say:

TO WHOM IT MAY CONCERN: We have been asked by the publishers of SUCCESSFUL FARMING to act as judges in their contest and see that prizes are all awarded fairly. This we will gladly do guaranteeing each contestant absolute fair treatment. Signed—W. W. MORROW, Treasurer State of Iowa; HUGH BRENNAN, Judge District Court; Rev. A. J. WILLIAMS.

In case of tie we will write each person so tied asking them to make as few words as possible from the letters of the alphabet, using each letter of the alphabet twice and only twice, and no one word more than once, each letter left over counting as one word. To the one tied in the counting who gives us the fewest words as above will be awarded first prize. This practically eliminates all question of tie, but if there should by any possibility be a tie in this the prize will be divided equally between those so tieing.

Subscription without counts is 25 cents per year, additional counts after you have three entered as per our terms in paragraph "condition" above may be entered at 25 cents each.

This contest is not to be confused with the guessing or estimating contests. Our contest is a test of skill in planning and counting and the best man wins. Nobody connected with our paper will be allowed to compete. Contest closes June 30, but get your counts in at once. See about time prize above.

Publisher SUCCESSFUL FARMING, 278 Tenth St., Des Moines, Iowa.

I enclose $..... for subscription to SUCCESSFUL FARMING, and I wish to enter the.....(write ladies' or gents') Contest. If $1.00 is paid send three counts; if only 50c is paid send ONLY ONE count. The extra $50.00 go only to those having THREE or more counts entered.

My Count is: (1).....(2).....(3).....

NAME.. .....

P. O..... State.....

Address all letters to SUCCESSFUL FARMING, 278 Tenth, St., Des Moines, Iowa.

HOW TO FERTILIZE.

Every farmer knows that plants ed Food as much as cattle. He nows, too, that plants cannot get l the Food they need out of the ound alone. He must supply them ith certain Foods himself, or they ill not thrive and bear their full yield fruit. Exactly as he supplys hay id oats to his horse so he must sup- y Nitrogen and Phosphate to his ants. He may buy these in the open arket exactly as he does his hay or s oats, or he can buy them in com- nation in the form of a "complete rtilizer." There is no secret value the complete fertilizer, it is noth- g more nor less than the ingredients mbined and sold at a higher price. itrogen is by far the most expensive s well as effective of plant foods, and will pay the farmer well to stop id think before he buys it in this mbination form.

The Best and Cheapest Ammoniate.

The cheapest and most practical rm in which to furnish Nitrogen to lants is Nitrate of Soda. In the rain- ss region of Chili are stored away ast quantities of Nitrogen in what e known as Nitrates—the only form i which Nitrogen can be utilized by plant. The Nitrogen which exists organic matter, that is, roots, ems, dead leaves, weeds, leather, ied blood, etc., and also Nitrogen in ie form of Ammonia salts, must first e changed to Nitrate before it can e taken up by plants. This change dependent upon conditions of weath- . If season is backward or there e a prolonged drouth this change ay be so retarded as to deprive the lant together of Nitrate Food at the ery time it needs it most; moreover itrogen in the form of Ammonia salts aves acid residues in the soil. Ni- ate of Soda, on the other hand, is ntirely independent of weather and aves the alkali behind as a soil weetener. It is immediately avail- ble under all circumstances, for it is eadily soluble, and immediately it omes within reach of the roots of lants it begins to be taken up by them. t can, therefore, readily be seen that he practical value of various forms f Nitrogen ranges from nothing at all, here conditions of temperature or oil prevent. Nitration, to 100 per ent. as Nitrate of Soda where Ni- ration has already completely taken lace. Moreover, the process of trans- orming the Nitrogen of cotton seed neal, dried fish, dried blood, tankage, nd other nitrogenous constituents of complete fertilizers," etc., into Ni- rate is very wasteful, for much val- uable Nitrogen is lost in the process, as well as by natural oxidation. Soil experiments have shown that 100 pounds of Nitrogen in these organic forms have only about one-half to three-fourths the natural value of 100 nost of their Nitrogen during the early pounds of Nitrogen in its Nitrated form of Nitrate of Soda.

A Great Saving.

In view of these facts it seems ex- traordinary that farmers, should con- tinue to purchase their Nitrogen in compound form with phosphate, when they can procure it much cheaper, and ready for the plants' immediate use, in the form of Nitrate of Soda. The New Jersey Experiment Station, after ana- lyzing nearly 200 different "complete fertilizers," found the average value or market price of the various constit- uents to be $25.66 per ton, while the average selling price was $34.23 per ton. In some instances the actual value of the plant food was as low as $15.00 per ton, while the price per ton was $35.00. Available Nitro- gen in the form of Nitrate of Soda costs about 17 cents per pound. It costs from 25 to 30 cents a pound in so-called "complete fertilizers," and even then it is often in a form which is not available as food for the plants, for it must first be converted into Ni- trate. The time required to do this varies from a few days to a few years according to the temperature of the soil and the kind and condition of the material used in the "complete fertilizers."

It must be recognized that the farm- er should have a chance to derive some profit from the use of a fertil- izer, and wise buying is a prerequisite to successful use.

How it Helps Crops.

If a young pig or a young calf does not have an abundance of the right kind of feed when it is young never recovers from it, no matter how judiciously it is afterwards fed. The in- telligent cultivator has learned that this holds good in the feeding of plants. Nitrogen is the element which enters most largely into the building up of the plant itself—root, stem and leaves. Most plants need to take up most of their Nitrogen during the early stages of their growth, as in oats. It is plain, therefore, that the cultivator cannot afford to overlook Nitrate, and thus endanger the chances of his crops which must have Nitrogen in a form the plants can use. The presence of Nitrate at the outset enables the plant to get its food when it needs it most and develops a vigorous growth of roots, leaves and stems capable of withstanding the scorching rays of the sun or sudden changes of the tem- perature, disease, or the attacks of parasites.

Nitrate of Soda is of high value for early crops, such as peas, corn, beets, cabbage, etc., where rapid maturity is desirable. It is a special help to hay, grain, rye, wheat, timothy, or- chard or other cereals or grasses, all of which are unable to obtain suf- ficient Nitrogen from the soil just when they need it. It is a great spe- cific in the production of sugar beets, potatoes, cotton and cane.

Small fruits, such as blackberries, currants, raspberries and gooseberries, which need a steady, even growth, are greatly benefited by Nitrate of Soda, which can be furnished all ready for digestion when the plants require it.

The highest agricultural authorities have established by careful experimen- tation that 100 pounds per acre Nit- rate of Soda applied to crops has pro- duced the INCREASED yields tabu- lated as follows:

Barley	400	lbs. of grain.
Corn	280	" "
Oats	400	" "
Rye	300	" "
Wheat	300	" "
Potatoes	3,600	" Tubers
Hay, upwards of	1,000	" Barn cured
Cotton	500	" Seed cotton
Sugar Beets	4,000	" Tubers
Beets	4,900	" "
Sweet potatoes	3,900	" "
Cabbages	6,100	pounds.
Carrots	7,800	pounds.
Onions	1,800	pounds.
Turnips	37	per cent.
Strawberries	200	quarts.
Asparagus	100	bunches.
Tomatoes	100	baskets.
Celery	30	per cent.
Hops	100	pounds.

Nitrate of Soda is a plant tonic, and an energizer; it is not a stimulant in any sense of the word.

Nitrate of Soda may be used alone without other fertilizers, as a Top Dressing, at the rate of not more than 100 pounds to the acre.

How to Learn About It.

The Nitrate mines in Chili are su- pervised by the government and au- thentic information is annually circu- lated about Nitrate of Soda among those who should profit by it. For this purpose the Nitrate of Soda Propaganda is maintained. Advertisements have been placed in the leading agricultu- ral papers and offices established at John Street and 71 Nassau Street, New York, for giving out information in regard to actual tests made with Ni- trate of Soda and as to its uses.

OLD-FASHIONED WHEAT CROPS

Big stalks, well-developed heads and large kernels—the best, whether you sow for hay or wheat—will be *assured* if you use

Nitrate of Soda used here

Nitrate of Soda

No Nitrate of Soda used

The two wheat fields illustrated above tell their own story. By tests carried on all over this country, it has been demonstrated that 100 lbs. of Nitrate of Soda to the acre has resulted in an average increase of 300 lbs. of wheat on each acre. It is the standard nitrogenous fertilizer, and the cheapest.

TEST IT FOR YOURSELF ENTIRELY FREE

Let us send sufficient Nitrate of Soda for you to try, asking only that you use according to our direc- tions, and let us know the result. To the twenty-five farmers who get the best results, we offer, as a prize, Prof. Voorhees' most valuable book on fertilizers, their composition, and how to use for differ- ent crops. Handsomely bound, 327 pages. Apply at once for Nitrate of Soda, *as this offer is necessarily limited.* "Food for Plants," a 237-page book of useful information, will be sent free to farmers while the present edition lasts, if paper is mentioned in which this advertisement is seen.

Send name and complete address on post card.

WILLIAM S. MYERS, Director, John Street and 71 Nassau, NEW YORK

Resuls on Hay.

For three years samples of Nitrate of Soda have been sent to farmers experiment on Timothy. In each case two patches were marked out in the hay field, side by side—each about 20 feet square, about 1-100 of an acre. One received Nitrate of Soda, equiv- alent to 100 pounds, per acre, the other had none. The following are fair samples of the results reported, giving the weight of cured hay in each case:

Horace Field, Mattapoisett, Mass.
Plot without Nitrate, 60 lbs. Plot with Ni- trate, 90 lbs.
"Hay was well made. Nitrate plot ready to cut 10 days earlier than plot without Nitrate and the growth now is much heavier on the Nitrate plot."

William Norman, Toledo, O.
Plot without Nitrate, 36 lbs. With Nitrate 62 lbs. "This is what I call dynamite soda"

E. P. Nance, Oak Level. Ky.
Plot with out Nitrate, 70 lbs. Plot with Nitrate, 104 lbs.

Ole O. Hatledal, Benson, Minn.
Plot without Nitrate, 20 lbs. With Nitrate, 52 lbs.
"Plot with Nitrate now thick with grass again and will produce second crop of hay. Plot without Nitrate will not be worth cut- ting again."

Herbert J. France, Blairsville, Penna.
Plot without Nitrate, 63½ lbs. With Nitrate 118 lbs.
"Hay was thoroughly cured when weighed. Plot with Nitrate kept six or eight inches ahead all summer."

Alonzo J. Bryan, Hunterdon. N. J.
Plot without Nitrate, 31 lbs. With Nitrate, 63½ lbs. "The Nitrate made wonderful re- sults."

Chas. P. Groth, Springville, N. Y.
Plot without Nitrate, 78 lbs. With Nitrate, 147 lbs. "Cut Nitrate plot twice."

E B Strong, Cauming, Nova Scotia.
Plot without Nitrate, 68 lbs. Plot with Nitrate, 91 lbs. "Much pleased with results."

Leonard D. Spicknall, La Belle, Mo.
Plot without Nitrate, 44 lbs. With Nitrate 69 lbs. "I consider Nitrate of Soda a most valuable producer as hay seems softer and brighter from Nitrate plot than from the other."

The average of these tests show increase of 2,775 pounds of field-cured hay per acre with the use of 100 pounds Nitrate of Soda. Bearing in mind the cost of Nitrate of Soda per 100 pounds, it is very evident that it pays to use it.

The Purpose of the Nitrate Propaganda.

Free books, bulletins and all de- desired information are promptly for- warded to farmers interested. Thou- sands of farmers of the United States have seen Nitrate of Soda advertise- ments and thousands have written in answer to them for free books.

No Nitrate is sold by the Nitrate Propaganda; it is maintained simply to put the facts clearly and accurately before the cultivators throughout the country, and rapidly they are finding ical form of supplying their crops est and by far the most prac- with Nitrogen. It is the only existing instantly available Nitrogenous Food for Plants.

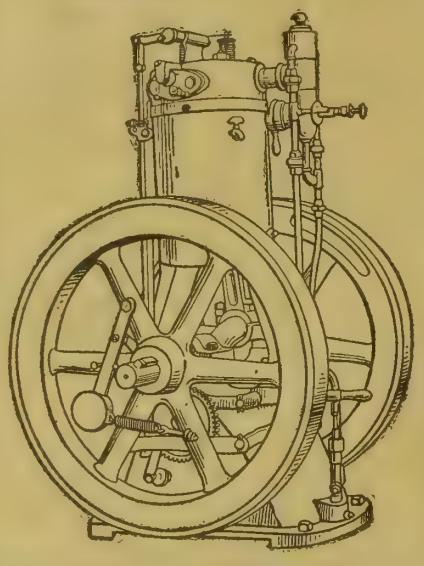
Free Information.

To a limited number of farmers who want to know the Propaganda, in ad- dition to bulletins from agricultural experiment stations, giving results of actual trials with Nitrate of Soda, is sending a handsomely illustrated book, which any farmer may understand, and which should be in the library of every farm in the United States.

Farmers who may not care to make any of the experiments who would like to know the results that others have obtained or who desire any in- formation whatever concerning Nitrate of Soda, should write to William S. Myers, Director, John Street and 71 Nassau Street, New York.

Improved Peerless Engines

Gasoline **Distillate** **Alcohol**



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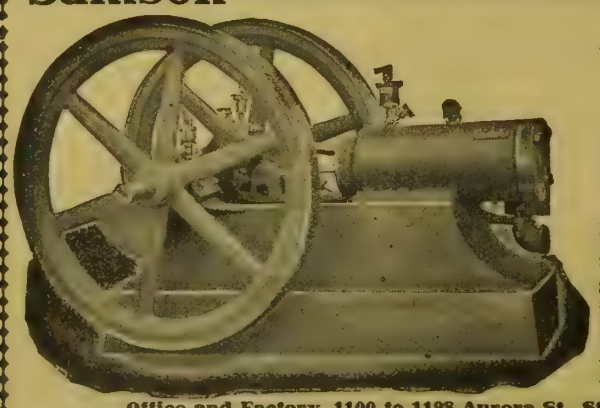

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Fully Guaranteed in every particular

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Samson Centrifugal Pumps
Are the Best.

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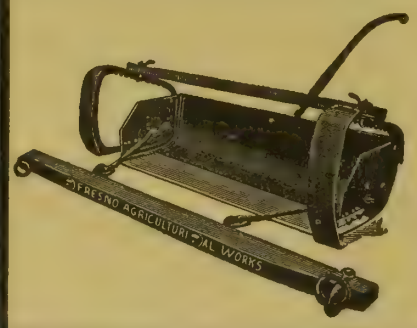

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Our competitors all use the name Fresno to help sell thir scrapers, acknowledging the superiority of the Fresno. We make the only GENUINE FRESNO SCRAPERS.

Send for Catalogue B

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Fresno, California

The Callahan Distillate Engines

Four Carloads have arrived since the Fire

A First Class Engine at a Moderate Price

Centrifugal Pumps
Three Carloads in Stock

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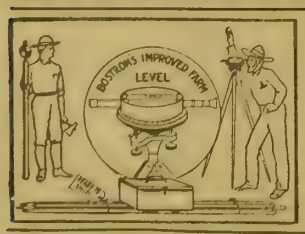

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Used for irrigation and drainage work. Cheapest and best level yet invented for farm use. Has the latest patented improvements in simplicity and usefulness. Can be operated by any one. Price including telescope tripod and target rod $12.50.

PALACE HARDWARE COMPANY,
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COAST AGENTS.
Send for Circular.

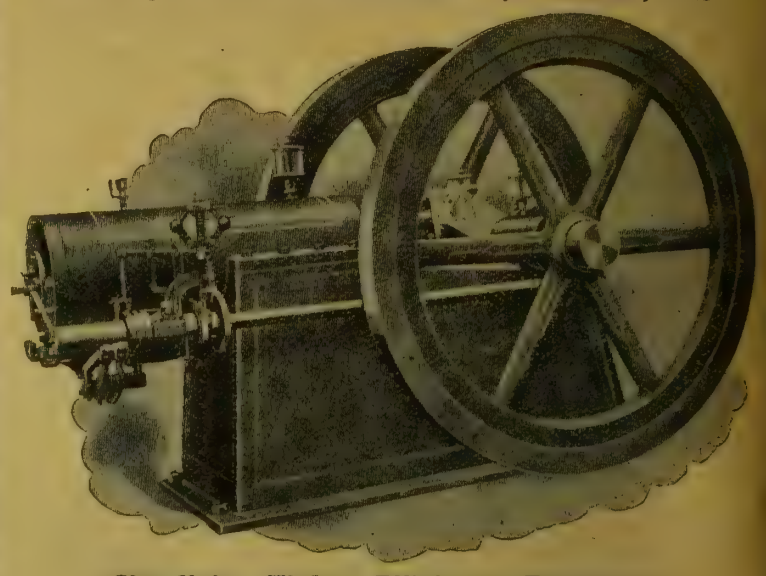
Use Tom Lewis' Fertilizer for Orchard, Garden and Field

Free From Weeds My stock is now ready. **Immediate shipment guaranteed.** Single sacks or carload lots. **My testimonials are the finest.** Send for circular and prices. **Office and Works: 1916-1918 10th St., Sacramento, Cal.**

There is a Reason why you should buy

Columbus Engines

Made by the Columbus Machine Co., Columbus, Ohio



Simplicity—Highest Efficiency—Economical
Highest Grade of Material—Best of Workmanship

They have been in the field over fourteen years.

Their output is one of the largest in the United States.

What does this mean? It means that the present standard they are maintaining on Columbus Engines is the result of fourteen years labor of experienced mechanics with one of the best equipped plants in the United States behind them, to produce an engine which is simplicity in itself.

Free from all complicated and trappy devices. It don't take an expert mechanic to see the simplicity and good points on the Columbus Engine over other makes.

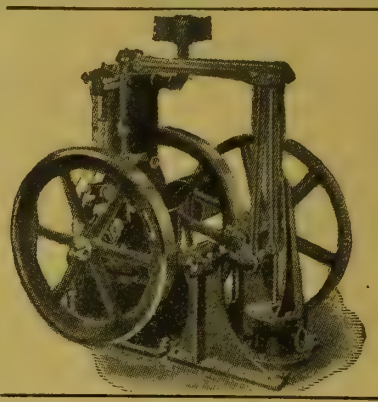
It don't take an experienced mechanic to operate it. We carry complete stock at all times. Come in and let us show you.

Estimates given on complete pumping plants.
Correspondence Solicited.

Greenleaf Compton Co., Agents

121 So. Los Angeles St., Los Angeles

If you can't come write us and we will send our representative.



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Just the thing to run the feed cutter, the pump, the churn, the grinder, or anything on the ranch. It's well named

The Little Wonder

Write or call on

Wm. Gregory
602 No. Main St. Los Angeles, Ca

STEARNS GASOLINE OR DISTILLATE ENGINE

Has many points superior to any other engine.

Hundreds In Use
Every One Satisfactory

Built for California cheap fuel.
For further information, write

STEARNS GAS ENGINE WORKS

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WITH A SEIVERT OIL BURNER

You can burn 100,000 feet of air with every 130 gallons of oil; this means perfect combustion. To burn more than 100,000 cubic feet of air with 130 gallons of oil, there is a decided loss of heat. To burn less than 100,000 cubic feet of air there is a loss of fuel. The only safe and reliable burner on the market.
Send for full particulars.

SIEVERT OIL BURNER CO. 1001 No. Alameda St., Cor. Main and Ord Sts., Los Angeles, Cal.

STABLE MANURE

We load this very carefully, eliminating all long straw or refuse. Inquire now for summer deliver y

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UNTIL YOU INVESTIGATE "THE MASTER WORKMAN," a two-cylinder gasoline, kerosene or alcohol engine, superior to any one-cylinder engine; revolutionizing power. Its weight and bulk are half that of single cylinder engines, with greater durability. Costs Less to Buy—Less to Run. Quickly, easily started. Vibration practically overcome. Cheaply mounted on any wagon. It is a combination portable, stationary or traction engine. SEND FOR CATALOGUE. **THE TEMPLE PUMP CO., Mfrs., Meagher and 15th Sts., Chicago.** THIS IS OUR FIFTY-THIRD YEAR.

California Cultivator

Los Angeles March 21, 1907 San Francisco

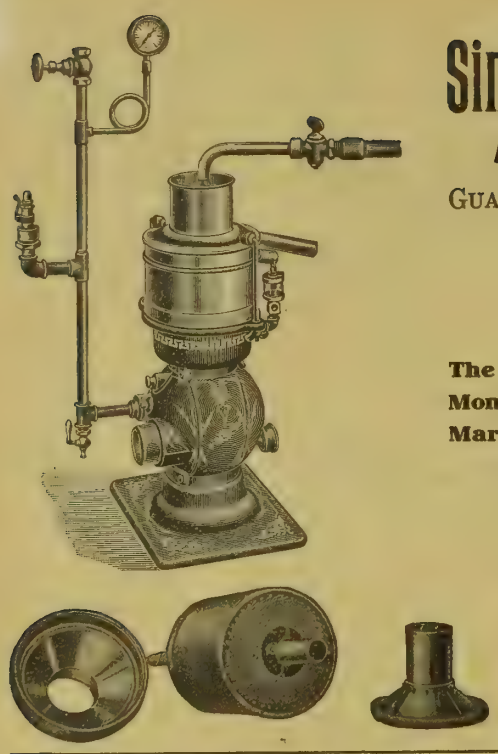
Vegetable Gardening in California

THE financial importance of the home vegetable garden is rarely appreciated, except by those who have all their vegetables to buy. Such a garden, even in its highest degree of perfection, may not bring in one cent, but it's difficult to estimate the dollars it keeps in the family purse. Its importance should be estimated from the amount saved and not from the amount made or cleared; and aside from the economy, pleasure and commendable pride that the owner derives from a well kept garden, he has the satisfaction of knowing that he is providing his family with fresh and wholesome food, lessening his drug and doctor's bills, and very probably prolonging the lives of those dependent upon him.

Our favorable soil and climate, increasing population of cities, and better transportation facilities have made possible the development of the vegetable growing industry, whether the product is intended for home or eastern markets. Few avocations require more intelligence and business tact than truck farming, and experience is necessary to its successful undertaking. The average man who, for the first time, engages in truck farming does not appreciate, or even recognize, the many essential details of the business, and fails in his undertaking and declares there is no money in it, or that soil or climate are unsuited, while, in the majority of cases, the real cause of failure was the man.

The capital employed may not have been sufficient for the area cultivated; the soil may not have been put into condition for producing a paying crop; fertilization may have been inadequate, or cultivation improper or insufficient—or, it may be that the gardener was of the opinion that his successful culture of general farm crops in the past insured his successful culture of potatoes and onions in the future. Though a truck farmer be well equipped for the undertaking, he is fortunate if he pays the expenses of the first year's operations.

The lack of appreciation of the advantages of our soil and climate, and ignorance of the requirements and hardiness of common plants, deprive many homes of fresh fall and winter vegetables. That a number of our most common vegetables will withstand our winter climate all over California and even repeated freezing is not generally understood, and the consequence is that no effort is made to grow them. We may grow many garden crops throughout all seasons, and such table delicacies as lettuce and radishes may, in many sections, be sown with profit each month in the year.



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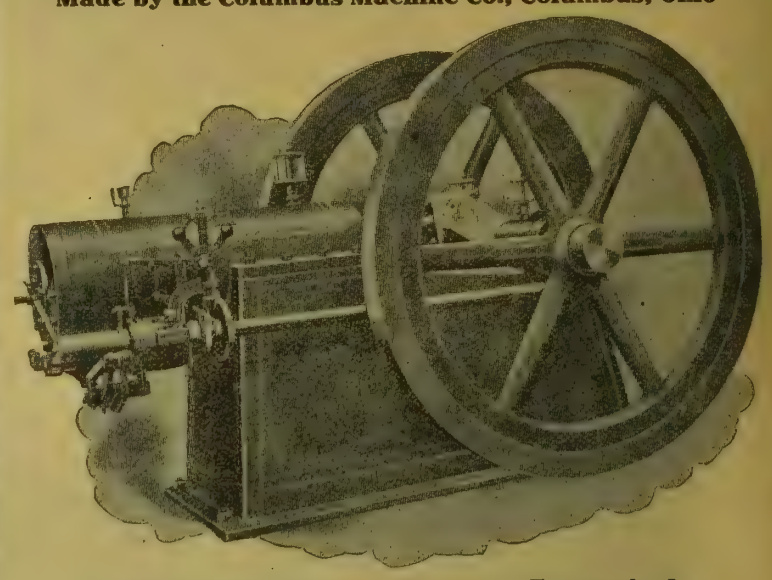

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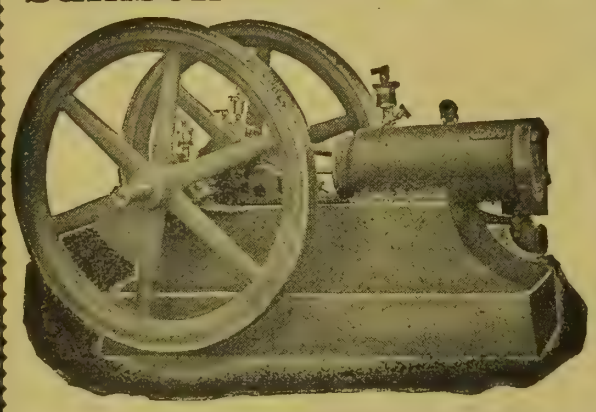

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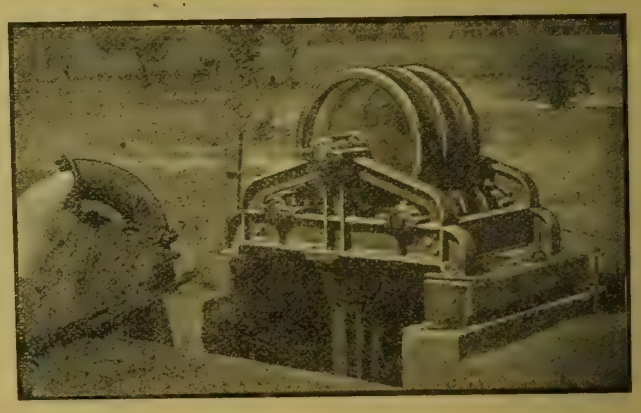

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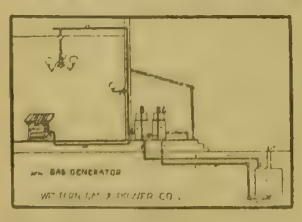

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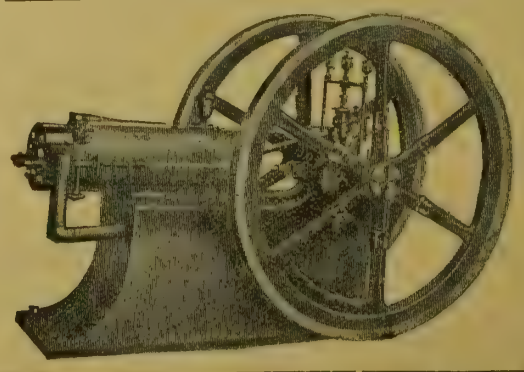

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California Cultivator

Vol. XXVIII—No. 12 Los Angeles, California, Thursday, March 21, 1907 Subscription $1 a Year

Citrus Culture and Allied Subjects

A Lecture Delivered Before the Southern California Horticultural Society, March 11, 1907

By DR. C. J. K. JONES, Director of Study and Research, Los Angeles Public Library

THE production of citrus fruits in commercial quantities in the United States is a matter of practically only 40 years. Previous to 1870 there were some sweet seedling groves, principally on the Indian river, Florida, such as the famous Dummit grove on Merritt's Island.

Scattered here and there among the native white homes of Florida were a few seedling trees, which had developed from the seeds brought in mainly from Indian river, which the women had planted because the trees made a good shade around the house.

These seedling trees were the starting point for that development of the orange industry in Florida, which in the winter of 1893-94 had reached a crop of approximately 6,000,000 boxes, but which by the freezes of December 1893 and February, 1904 was reduced in the following year to 250,000 boxes. It was about 1875 or '76 that there commenced the budding of wild orange trees in the hammocks. One of the most famous of these groves was the Bishop grove at Citra, whose crop one year was bid for at $60,000 on the trees. These wild trees were the result of the Spanish invasion of Florida, which brought the sour orange (Citrus Bigaradia) into that territory and whose seeds were scattered by the agency of man and animals. In passing I may say that the seedling groves to which I have referred became very valuable.

For the Judge Speer grove near Sanford, $60,000 was offered and refused. The grove was less than five acres and netted $5000 to $6000 annually. It was killed to the ground in the disastrous freezes in the winter of 1893-4 and never revived. Sweet stocks will not withstand shocks of cold, or of mutilation, as will the sour orange and rough lemon stocks.

The great orange boom in Florida was in the decade 1880-1890. Thousands of acres a year were set out. 1894, the year of the great freeze, witnessed the collapse of the boom, but not of the industry. There were stout hearts and strong arms, supported by a firm faith in the possibilities of a great fututre for the orange industry. The center of the citrus culture moved farther south, but not all the grove-men, by any means. There are single thriving groves in the old districts, but their number is small. The President of the Florida Horticultural Society, G. L. Taber, has a profitable grove and nursery at Glen St. Mary, in North Florida, near the Georgia line.

It is on this place that the Government is experimenting by cross-breeding and hybridization to secure a hardy orange that will stand freezing temperatures and produce in marketable quantities. I have seen that experimental grove and tasted its fruit. Growers of citrus fruits in semi-tropical regions in the United States, need not have any fear of serious competition from the results of that experiment for many years to come—if ever. The fruit and I may add the trees are about as unpromising to the average citrus grower, as anything in the citrus family can well be. A trifoliata hedge is a thing of beauty, and a joy, if one keeps away from its thorns, compared with the hybrids I saw in September 1903 at Glen St. Mary.

The development of citrus culture in California is familiar to you all. If I say it is practically a period of twenty years for which oranges and lemons have been produced in commercial quantities, I shall not be far out of the way. Ten years ago, California produced a trifle over 5,000,000 boxes—the statistics say 5,063,294 boxes of oranges and 363,792 boxes of lemons, something over 15,000 (15,153) cars altogether. The potential output in a normal season is now some 30,000 cars.

As compared with other fruit industries, citrus culture in the United States is only in its infancy. Relatively speaking we are just beginning to know the scientific principles and practices, which underlie its successful prosecution. There is much that we can learn from the methods of other countries, but as applied to the conditions of citrus culture in the United States there are many old world usages and ways in the culture of citrus fruits, which we must revise (of various kinds of stock on which to bud—as related to climate, soil, transportation and market, etc.).

Again, what will do in Florida will not do in California, except in a general way; the conditions of soil, seasons, moisture and culture being radically different in some particulars. The instructed, observant, and thoughtful man will learn wherein he must adapt himself to the conditions under which he is placed. Of course there is a common basis of knowledge on this subject, such as the apprehension of certain facts in regard to soil physics, its chemistry, and biology, the nature of plant physiology and pathology, as also its biology, and especially the characteristics of the plant-life under cultivation in its multiplied relations.

Having been a hard student and reader for over forty years I may say that I know of no calling that involves such a wide range of theoretical and demonstrated science, and practical experience, as is involved in the culture of plant life, when such culture is carried on intelligently, which is to carry it on successfully, all other things being equal. In this respect citrus culture takes a foremost place and has multiplied problems.

With the habit that is strong on me, permit me, before going farther, to recommend what is altogether too rare among a majority of horticulturists, the habit of diligent, thoughtful and consistent reading on the various subjects related to your particular industry, in the horticultural field. Money spent for books and literature thereon, and read carefully, is one of the most profitable investments one can make both intellectually and as a monetary venture. I have repeatedly observed where men lost thousands of dollars which an elementary knowledge of modern "book farming" would have prevented.

In this state every citrus grower should possess the late works of Lelong, Wickson and the Agricultural Experiment station bulletins. If possible, also Garey's and Spaulding's smaller works. To know what Florida has done, and is doing in the way of a generally accepted practice, "Citrus Fruits and Their Culture," by H. Harold Hume is the best resumé. There are some bulletins by the United States Department of Agriculture which, relating to our subject, are of value. Our English brethren in Australia are also putting forth some valuable literature on the culture of the citrus and its diseases. Italy also.

But in addition to this literature, which is specific, I would recommend the reading of some reliable books on plant physiology, pathology or diseases of plants and trees; on the soil, its chemistry and physics; on bacteriology and on general chemistry, and by all means an up-to-date paper, which has some intelligence in it beyond the purely commercial instinct. The outlay for such literature will cost only a small sum, but did it cost many times its present purchase price the pleasure and profit derived therefrom would abundantly repay the sum expended.

King on "Phsyics of Soils" and King on "Soils;" Hilgard's "Soils," a book which I especially commend for its specific treatment of soils and for much valuable matter collateral thereto. Harry Snyder's small work on the "Chemistry of Soils." In this connection I may mention that Prof. Johnson's "How Plants Feed" and "How Plants Grow," although published more than a quarter of a century ago, are not without much value. Prof. Storer's new edition of his "Agriculture" in three volumes; the last edition contains a general resume of theory and practice that is almost cyclopaedic.

To those who can afford it, the "Cyclopaedia of Horticulture" four volumes (6 in last edition) and the forthcoming "Cyclopaedia of Agriculture," of which the first volume is out, under the editorship of Prof. Liberty H. Bailey of Cornell University, who is the leading authority on the general subjects treated of in these books, will be of great and daily service.

The "Farmers' Cyclopaedia" by Wilcox and Smith, in one volume, is a valuable reference work. On vegetable physiology the great work is by Prof. Wm. Pfeffer of Leipzig—three volumes—$22.50—too elaborote for the average reader as it is too expensive. A modern, well-illustrated botany will serve the ordinary purpose. Such a book is Prof. Campbell's of Leland Stanford University. There should be in every horticulturist's collection of books a work on plant diseases, and also on fungi. The writings of Geo. Massee—the English author—are up-to-date, exact, but exceedingly easy of understanding. His "Text-book of Plant Diseases," and text book of Fungi—just out—will cost only a matter of four or five dollars.

I have seen horticulturists and agriculturists sacrifice many score times this sum because they did not know what the former book on "Plant Diseases" would have taught them. Comparatively few citrus growers there are, who distinguish between injuries to their trees caused by gophers, and those caused by bacterial and fungous agencies.

Continued on page, 320.

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Deciduous Fruit Culture

By J. W. MILLS

INFLUENCE OF STOCK ON SCION.

SOME years ago, experiments were made by grafting pears on seedling pear roots and on quince stock. Triomphe was the variety used. The trees had been growing side-by-side for fifteen years when the tests were made, and all were apparently subject to all the conditions which were comparable, except that of stock. The trees bore about 300 fruits each and the tests were made for three consecutive years, mature fruit being used of course. Analyses were made and results tabulated.

The color of the fruit was very different, those upon the pear stock being green and those upon the quince being of a golden yellow with a decided rose blush on the side towards the sun: Some of the other differences of the two fruits were, that those from the quince stock were considerably more dense. Ten average fruits weighed over four ounces more than those grown on the pear stock; they contained more sugar and more acid than those on the pear stock. It was estimated that the fruit taken from the pear root tree contained a little less than fourteen pounds of sugar while that from the quince root tree contained about twenty-one pounds of sugar.

These figures were confirmed by a similar experiment carried on for several years on Doyenne pears grafted, upon quince and pear stock. The difference is said to be due to the greater activity of the chlorphyll in the case of the quince stock.

It must be remembered that quince stock makes a dwarf tree. It forces the tree into quick bearing, some fruit being produced the second year. They are especially desirable for interplanting with walnut trees where interplanting is practiced. Their rapid development, dwarf size of trees, large size and fine quality of fruit make them desirable for this purpose.

Quince stock has the advantage of being partially resistant to alkali. Trees growing on the Chino ranch have made a uniform growth on varying amounts of alkali. They also are quite resistant to flooding; trees in the Bear river bottoms in the Sacremento valley have stood without injury, while other varieties were badly injured.

The following varieties of pears are said to be well adapted to growing on quince root. Beurre Hardy, Doyenne du Comice, Duchess d'Anroulеme, Beurre Diel, White Doyenne, Winter Nelis, Colonel Wilder, Patrick Barry, Glout Morceau.

MIXED ORCHARDS.

The old method of planting large areas of deciduous trees to one variety is not as popular as it used to be, especially with certain varieties of plums. Almonds and apricots produce better when varieties are planted close together. We have in mind an orchard of two varieties of plums, there being but about three acres of each. The product of the four rows where the varieties joined bore more fruit every year than the entire remaining area. The soil and care was the same, but the results of about eight years showed a big advantage in having the varieties mixed or planted in small adjoining blocks.

Prof. Waugh, perhaps the best authority on plums in America, has made some interesting experiments on the behavior of plums when grown under different conditions. He found that when he covered about 500 blossoms of various kinds of Japanese plums with bags so that the pollen from others could not reach them, not a single fruit was set. Of 6000 isolated blossoms of sixty varieties of American plums, he only got five plums to set.

He also found that about 15 per cent. of all kinds had on an average, defective pistils and were incapable of setting fruit under most conditions. He said, "The health of the tree has a great deal to do with the condition of the pistils, a healthy Burbank plum having but 2 per cent. of defective pistils while a tree dying from the effects of brown rot fungus, 58 per cent. were defective.

Repeated observations have shown that buds so situated upon a branch as to command a relative large storage of food, have as a rule large blossoms, large ovaries and perfect pistils, while other buds less favorably situated on the same twigs develop sickly looking blossoms with pistils weak and wanting. Any condition of an entire tree which prevents the normal storage of food material in buds and branches is likely to show in defective pistils at the next blossoming time. A tree of Wolf Seedling which bore much too large a crop in 1896 had not a perfect blossom in 1897."

There is a lesson in this. If the lack of bud and fruit producing material causes imperfect blossoms, would not some experiments in fertilizers be a good thing for deciduous fruit growers to take up? It may prove to be a very profitable thing to do. The deciduous fruit growers of California have given this part of their business little or no thought. It was one time thought that irrigation was not only unnecessary, but harmful to the fruit. This is all changed now and it may not be long before intelligent fertilization will be one of it adjuncts to deciduous fruit growing.

RESISTANT FRUITS.

"I think it of interest to note the value of some accidental as well as studied and premeditated crossing (pollenization) of fruit of the above named families, that are now found to be wonderfully strong in constitution, free from diseases and exceedingly prolific. In North Texas, twenty-five years ago, Prof. T. V. Munson, of Denison, started to experiment in the cross pollenization of a number of the American and European grape vines with the wild (post oak) grapes of Texas; his object being to secure varieties having deeply penetrating, drouth resisting roots, such as the native (post oak) grapes possess; and at the same time get the flavor and sweetness of the finest American varieties. The professor has made over seventy-five thousand of such pollenizations and has from the pollenized seeds grown more than seventy-five thousand seedling vines, taking from years and upward to test each young vine for fruit, and throw away the poorer ones. From this vast number he has retained but thirty-nine varieties as worthy of propagation and recommendation to the public. His standard of judgment is: Is the grape as sweet or sweeter, and as well or better flavored than the Concord? Is it drouth resistant? Is it free from black rot, mildew or other diseases,

and finally, all things considered, is it a profitable and desirable grape to raise? If below the standard in any of these particulars it is rejected.

"Prof. Munson has done for the United States, and especially in grapes, what Luther Burbank of Santa Rosa, California, has done in new varieties of plums, nuts and vegetables.

"Turning from grape vines to that magnificient fruit, the pear, it may be of interest to relate somewhat more fully the history of the Sudduth pear; the parent tree being probably the largest pear tree in the world.

"Eighty years ago Thomas Constant, then a young man, came from Ohio to Illinois, settling on, and homesteading a piece of land twelve miles from Springfield, the capital city. He brought with him, among other seeds to plant in the new country, three little pear seeds. All three grew, but two were crowded, broken down and died; the third survived and now stands a monarch of fruit trees, 60 feet tall, and is over 12 feet in circumference at the height of a man's head above the ground.

"The editor of the Farm News of Springfield, Ohio, who with a large party of newspaper men and horticulturists from different states, visited this remarkable tree six years ago, stated in his paper that upon interviewing a number of old farmers in that vicinity they all declared the tree has never failed to bear a crop any year since it began to bear in 1826. The farm at Constant's death came into the hands of Judge Logan, Abraham Lincoln's law partner; he rented the land for half of produce and fruit, and it is of record among his papers that one year his share (half the fruit of the one tree) was 60 1-2 bushels, showing the crop that year was at least 121 bushels. Neither this old tree nor any of its children, propagated by farmers of the neighborhood or by Augustine and Company, of Normal, Illinois, its present owners (who bought from Mr. Sudduth, the successor of Judge Logan), have ever blighted in the least, but have always been blight proof, though standing at all ages in different states surrounded by blighted and dying trees of other varieties. Another peculiarity of this fruit is that it has no core, nor seed, nor hard gritty substance in its center; is sweet, juicy meat all the way through and is on this account eminently useful for preserving.

'John W. Yokum, of Williamsville, Illinois, bears the same testimony that hundreds of others who have long known and fruited this pear. He says: 'This fruit has always been in demand and sought after at the highest price. I consider it one of the best varieties of pears I ever ate, and for canning, pickling and preserving there is none better.'—E. M. P., in Texas Farm and Ranch.

PEACH TREE BORER.

All peach growers are familiar with the borer in the larval stage. For, as among most other insects, there are four stages in its life history; first, the egg; second, the larva; third, the pupa, and fourth and last, the imago, or perfect insect, which in this case is a swift flying, bright colored little moth, measuring an inch to an inch and a half across the expanded wings, and strongly resembling a wasp in appearance.

The moths are not often seen, and even then few know of the relation they bear to the peach tree borer itself. The waspish appearance is undoubtedly a protection in many ways. They should be invariably destroyed when found.

These moths are very prettily colored. The wings of the male are transparent and only bordered with blue, while the fore wings of the female are blue throughout. The abdomen in both cases is blue, but that of the female is encircled by a broad orange band.

During the spring these moths lay their eggs, which are yellowish brown in color and very small, on the bark at or near the surface of the ground. The eggs soon hatch, and the minute larva makes its way as rapidly as possible beneath the bark of the tree, where it at once begins feeding.

It is at this point we look for a reason for the deposition of the eggs near the surface of the ground. We find it in the fact that the jaws of the young larvae are too weak to pierce the tough and hardened bark above but just beneath the surface of the ground they find entrance an easy matter.

Underneath the bark the larvae or borers feed through the summer, and in the extreme south on and on all winter. At the opening of the burrow there usually occurs a more or less copious exudation of gum, which is usually mixed with the droppings of the larva and with borings from the hole. This external evidence of the presence of the new worm is first observable about the middle of the summer. The larva frequently works well down into the the main roots.

The next spring regular feeding is resumed and continued until full growth is reached. In the far north this occurs in July or later. In the South the first larvae matures very much earlier, and continue "coming on" throughout the summer. Here at Auburn larvae of all sizes may be found in tne trees at almost any time during the summer, thus rendering it very difficult to outline any well-defined brood.

As soon as full growth is attained, the larva forms about itself a protecting cell wall or cocoon of silk and refuse, and within this changes to a pupa. In the pupal stage the larva loses largely its power to move, and takes on characters which somewhat roughly outline the future moth. It remains in this stage usually but a few days, soon shedding its pupal skin and appearing as the moth we have already described, thus completing its life cycle.

It is very evident that with such an extended term of life allotted it, a great deal of injury is possible with even a single larva. The chances of life are indeed small for trees infested as, for instance, those of a very badly neglected orchard in Alabama examined by Prof. Earle, some of which had as many as fifteen and sixteen worms each.—Alabama Experiment Station.

"Why," asked the judge, "did you deliberately get in the way of this man's automobile?" "Because," muttered the wrinkled crone, "I wanted to be described as being young and pretty once more before death."

"An amendment was tacked to John Skinn's epitaph. It consisted of one word, the word :friends.' It was put on in the dead of night. The epitaph, previous to the amendment, read: 'He did his best.'"

WILL NOT STRIP THE BRANCHES

The Moline Reversible Disc Harrow is an ideal tool for orchard cultivation. The frame is built down close to the discs making it lower than any other harrow of its class; the levers are short and always in the center, making it practical to work under low hanging limbs without stripping the branches.

The harrow is all steel and iron excepting the pole.

The discs may be reversed in a moment without taking them from under the frame.

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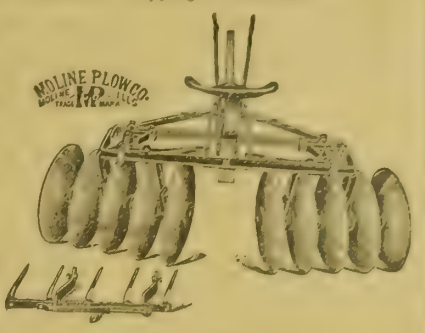
Bearings have a double set of wood blocks, giving twice the wearing surface to meet the end thrust.



For Orchard Work the Moline Reversible is equipped with an extra long frame instead of extension head.

The correct design, great durability, ease of handling, low build, arrangement of levers and adjustment for setting the gangs in and out on the frame makes this an all around harrow. Protected by patent. Made in four and five foot, 16, 18 and 20-inch discs; four and five foot, 16 and 18-inch cut out discs.

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Send Us Your Name and Address, enclose four cents in stamps to pay postage and mailing, and we will send you our **FLYING DUTCHMAN SONG BOOK** and Junior Catalogue Combined, containing Twenty-six old Familiar Songs with words and music.

Moline Plow Co., Moline, Ill.

Makers of the Famous Moline Plows and Other Flying Dutchman Farm Tools, Mandt Wagons and Bob Sleighs, Light Running National Manure Spreader and Henney Buggies

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WITH BAGGING ATTACHMENT will clean and grade any kind of grain, taking wild oats, cockle, and wild radish seeds from wheat or barley; cleaning and grading oats, cleaning beans, peas and any kind of clover or timothy seed. Every machine is guaranteed to do the work; is sold on THIRTY DAYS FREE TRIAL, all freight charges paid. Write for my free book, "How to Make Dollars Out of Wind," and "A Remedy for the Smut Evil."

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Eggs $1.50 per 15.

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Grand laying strain, large vigorous stock, eggs especially recommended for incubator hatching. $1.00 per 15, $5.00 per 100, special mating $1.50 per 15.

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Better Secure Your Stock At Once, as the Supply Is Short.

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I have for sale the finest block of trees in California, just in their prime for this spring's planting. Get my prices. Special figures made for lots of 1000 or more. Don't wait until I have sold them before writing.

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Superior Squirrel and Gopher Poison
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Absolutely the best and cheapest exterminator yet discovered. Sure and speedy death to all kinds of

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And all kinds of orchard pests. Ask your dealer for Superior. If he don't keep it, write us, sending his name. Prepared only at the laboratory of the

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Directions Printed on Every Package *Los Angeles, Cal.*

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USE C. C. C. ANTI-CARBOLIC TREE SPRAY

This spray is ready for use by simply adding cold water. It assimilates perfectly and forms no sediment. Makes the trees clean and healthy. **The most successful and economical spray.**

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With the Citrus Growers

By J. W. MILLS

SUBSOILING ORANGE GROVES.

THE use of the deep subsoiler in orange and lemon groves was one of the things conceded to be of great advantage a few years ago. Little or nothing is heard of it now, though some lemon growers use it occasionally and some of our best orchardists use it on sloping land as a check for holding the winter run-off during heavy rains.

Mr. Mills, of the Arlington Heights Fruit Company, finds that it works to great advantage in this way. He runs it cross-wise with the steep slope. When the rain sends an excess of water down the slope, it strikes these cross furrows made with the subsoiler and the water sinks into the ground. This serves two purposes. It fills the soil with the maximum amount of water and prevents washing at the same time.

We believe this is the most intelligent use of the subsoiler that we have yet observed. It takes the tree when it is in the most dormant state possible and when the least amount of evaporation is taking place. Root pruning is effected at the same time and this is now considered an important adjunct to orange growing; some of the most successful growers now practice it regularly, though not on the wholesale scale as was done in the past.

The subsoiler has done considerable damage by injudicious use, and this has a tendency to make most growers slow to use it. There are groves in Riverside, for instance, that we are told have never recovered from the effects of the subsoiler. It was used during the hot summer time to get the irrigation water deep into the soil. It did this, but the feeding roots and 90 per cent. of the whole root system was so far above the water as it was applied, that before the owner knew it the trees were so badly injured from lack of water, that several years of careful culture have not brought them back.

PREVENTION OF HARDPAN.

Under better treatment of water and soil, especially where the soil is less susceptible to the hardening process, the hard layer does not reach a stage to be properly called hardpan. But as the object of the orchardist should be to keep the root-bed in a moist condition continuously, this discussion is generally pertinent. What makes the existence of this dry hard-pan stratum the more serious is that it is found at just the right depth to incase the largest amount of feeding roots.

Now, knowing the cause of this troublesome obstruction, can it be prevented? Most certainly. You will find one orchard dwindling and unsatisfactory because its roots are incased, if not in real hard-pan, in hard dry soil most of the time. Adjoining is another bright and thrifty, because the root-bed is in favorable condition all the time. To prevent hard-pan is simply to keep this stratum sufficiently moist to prevent hardening. If you admit this, as I think most of you will, the problem is reduced to the best manner of putting in and retaining this moisture.

But before entering on the old ground I want to speak of a factor which has been less discussed, the importance of which I do not think is sufficiently appreciated. Underlying a large portion of our orchards, have a subsoil of considerable dept If this bed of soil several feet thi immediately under the root stratu proper is kept saturated, it will n only encourage deep-going roots, b will render a most important servi in helping retain the desirable equi brium of moisture in the root-bed self between irrigations.

This draft from the lower reserv is considerable, but is readily made from the irrigations, but the wat passing quickly through the yet moi root-bed. This reservoir should filled so far as possible by coveri the rainfall, and running irrigati water in winter, when the root-b does not need much, if any.

Those who have not practiced kee ing the surface in best condition t taking in the winter rainfall and ut izing extra irrigation water, will surprised to find how much this stor supply will help when the drying da come.

But, of course, the root-bed mu mainly depend on the regular irrig tions for its moisture, and how best get the water down to it mo thoroughly and economically and ho and keep it there when once down the most constantly important pro lem of the orchardist.

POSITION OF BUDS.

At a recent meeting of the Lem Men's Club, the subject of placi buds in nursery stock was discusse It was the opinion of the majori that nursery trees should be budd at least a foot above the ground f the reason that it left a more har standard for a considerable distan above the ground and thus gives le chance for the ill effects that mig follow poor soil condition that mig be brought about by improper irrig tion or other treatment. One of t leading citrus nurserymen of t state thinks such budding will ma the best tree, but will not bud th way, because the buyers might n want the trees.

The fact that the question of hig budding has been raised, sugges that there is more in it than is fir seen on the surface. From the fa that sour stock has been known to r sist sap diseases common to oran trees better than the budded varietie as also does the pomelo and roug lemon, it would seem reasonable suppose that if it ran up high enou to bring the bud wood above any co taminating influence of the soil, would be a point in favor of such method. There is an orange grov near Pomona, which is budded Washington navels on Florida So Stock, the buds having been place eighteen inches to two feet above th ground. We have inspected the grov for scaley bark gum disease and hav questioned the owner and neither c us have found a trace of the diseas below that limit, but quite a numbe of the trees have it on the trunk above and on the branches. This only one case and of course it is n criterion, for "One swallow does no make a summer." When numerou growers think they can see an ad vantage the question is surely wort looking into.

A hard character always is a weal one.

The self-satisfied seldom are satis factory.

TREES

True to Name

ROEDING TRUE TREES FRESNO. CAL.

Cool weather and bountiful rains have done much to prolong this season. Planters should get their orders in immediately if they desire to secure a complete assortment.

We are still in a position to furnish leading varieties of

Apricots, Peaches, Nectarines Apples, Pears, Cherries, Almonds, Grape Vines Roses

and are prepared to offer special inducements on quantities.

Citrus

Trees: Our assortment of leading varieties is still complete. All are grown in the great thermal belt at Exeter, Tulare County, Cal.

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Our assortment of oil and pickling varieties was never better. Our catalogue tells all about them.

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It will be worth your while to write us for our list of varieties we still have in stock. We still have many of the leading and best sorts.

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Our illustrated booklet tells all about them.

Santa Rosa Plum
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We are the sole propagators and disseminators of the Burbank creations and we will gladly give any information regarding these great specials.

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Our new catalogue is remarkable for its completeness. It contains much valuable information, and is superbly illustrated. Mailed free to any address. Price list on application.

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INC.
Geo. C. Roeding Pres. & Mgr.
Box 14 Fresno, California, U.S.A.

California Horticulturally

By JOHN ISAAC, Sacramento, California

OVER PLANTING OF GRAPES.

THE cry has gone forth again that grape planting is being overdone, and those who already have good paying vineyards are warning those who have not to beware of planting. lest profits may be reduced. Ever since we have any recollection of fruit growing in California, and that covers a generation, we have heard the same advice given and it has always gone unheeded. People have continued to set out new orchards and to plant new vineyards and still have found a market for the increased output. The fact is, that those who give such advice see things as they are and not with the eye of prescience. They know that the present outlook nearly equals the demand, and while observing the increased output cannot realize that there is also an increasing demand. We should never advise anyone to stop planting. Go on, plant and take your chances with the rest, and by the time your orchards and vineyards come into bearing there will be a market for the product. The population of the United States is growing with wonderful rapidity, new country is being developed, new markets opened. Railroads are being built everywhere, and the markets are being widened faster than we can hope to supply them. There is little danger of overproduction, and in any event, it will only be an overproduction of the worst, there will always be a demand for the best.

FIGHTING CODLING MOTH.

The season has arrived when it is necessary to commence active warfare against the codling moth pest, if marketable apples are desired. The parasite for this pest, while it is doing good work, from reports which have been received, is still not yet found in sufficient numbers to warrant full reliance being placed upon its work in controlling the worm. There need be no hesitancy about spraying where this parasite has been established, as it is a pupa parasite and does not attack the moth until it has left the apple and has commenced its changes into the pupal condition. As the poison sprays are used to catch the worms before they enter the fruit, it cannot be eaten by the parasite. It is therefore safe to spray, even though the parasite has been established. This is not true, however, of internal parasites, those which enter their hosts and stay with them in all their changes. In such cases spraying which will kill the host insects will also kill the enclosed parasites. This is the case with all parasitic enemies of scale insects, and therefore where parasites have been introduced for this class of insects spraying and fumigating must be avoided unless it is desired to kill both enemies and friends at the same time.

PEAR BLIGHT CAMPAIGN.

The season's war on the pear blight in the northern counties has been brought to a close, and with good prospects of victory. It is during the winter season, while the trees are dormant, that the best work can be done, as the blight is then very manifest, is not spreading, and can be thoroughly removed. The great object to be attained is to remove all the hold-over blight. It is from this hold-over that a new start is had in the spring, and if this is removed, there are no germs left for a fresh start, the source of infection is gone and the disease stopped. The work done last year demonstrated the practicability of this method, and such good results were obtained that the work has been taken hold of with more spirit by the growers this season and has been more thoroughly done. Of course, the Washington experts have not eradicted the disease, but they have demonstrated that, with eternal vigilance and conscientious work, Bartlett pears may still be grown in California.

DR. JONES' LECTURE.

Special attention is called to the leading article in this issue by Dr. C. J. K. Jones. Dr. Jones has long been recognized as one of our leading horticulturists, having made a deep study of the science for a period of forty years.

Of late years he has made a most exhaustive study of citrus culture and to make it thorough and practical has owned (and resided in) groves in both California and Florida. As a thoroughly practical and scientific writer and lecturer on the orange we believe he has no superior.

NEW HORTICULTURAL REPORT.

The Second Biennial Report of the Sate Commissioner of Horticulture has been received from the State printer and is now in the hands of the fruit growers of the state. The report is one of the best ever issued and covers a wide range of subjects of interest to the fruit grower. Copies can be had on application to the State Horticultural Commissioner.

I am particular about eating. Nothing but Purina for me, for I'm a Checkerboard Chick. See my ad, page 315.

Growers of Trees BEFORE BUYING **Orange Trees**

SEE MINE, OR WRITE ME ABOUT YOUR CITRUS NEEDS. IT WILL PAY YOU.

B. C. Benner Citrus Nurseries San Dimas, Cal. Home Phone 1913

Late Valencia Buds

I have 1000 Late Valencia year-old buds, running from ⅝ to an inch in diameter, now ready for market. Call and inspect stock or write for prices. Nursery ½ mile west of Irwindale, on Covina branch of S. P. R. R.

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Fine Budded Orange Trees

Nalencias, Navels, Etc.

Heslop & Greenwood, Lamanda Park, Cal.

Surplus Trees

Apples, 4 to 6 ft. 7c
Cherries, 3 to 4 ft. 10c
Cherries, 2 to 3 ft. 6c
Prunes & Plums 4 to 6 ft. ...6c
Peaches 4 to 6 ft. 16c
Orange Clings, Wiley Clings, Triumph, Hale's E. and Picquette Late
S. S. Almonds, 4 to 6 ft. ..10c
Jap. Mam. Chestnuts, 3 to 4ft 10c
Gooseberries (assorted) 10c
Cuthbert Raspberries $3 per 100

Send for surplus list.
Phone Sebastopol Rural 93.
A. F. SCHEIDECKER
Pleasant View Nurseey **Sebastopol, Cal.**

The Anaheim Evergreen Nurseries

Tim Carroll, Proprietor Anaheim, Orange County, Cal.

The Oldest Nurseries in Southern California. Established in 1868.

We can furnish Phoenix Canariensis and Washingtonia Robusta Palms and Dracaenas in sizes from 3 to 8 feet in carload lots. We also have a fine stock of Pine, Acacia, Rubber, Camphor, Sterculia, Live Oak, Catalina Cherry, Scarlet Flowering Gums, Monterey, Blue and Italian Cypress and other varieties of Ornamental Trees and Plants.
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See Our Cream Separators

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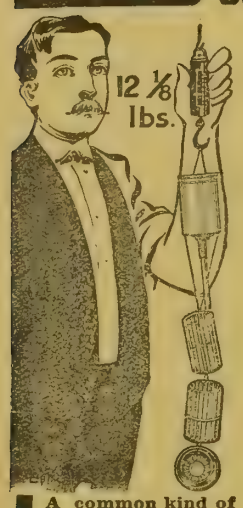

A common kind of "Bucket Bowl." Heavy, hard to wash, easy to rust.

SHARPLES Dairy Tubular Bowl. Simple, light, durable, easy to wash.

If you don't **know** that Sharples Dairy Tubular Cream Separators are **different,** take no chances until you find out. "Bucket bowl" agents depend on catching the fellows who **don't** know. Don't let them take the difference out of **your** pocket. One difference is in the bowl.

Shake The Insides Out!

Before you buy a separator shake the insides out of the bowl. It will show you how heavy, complicated, hard to wash, easy to injure, quick to rust, "bucket bowls" are as compared to Dairy Tubular bowls. **Sharples Dairy Tubulars are different.** Nothing inside Dairy Tubular bowls but a small dividing wall of triple tinned pressed steel—no bigger than a napkin ring—good for a lifetime. Yet Tubulars have twice the skimming force of any other separator—skim at least twice as clean.

You have common sense—want to save your wife work—want to save yourself repairs and cream—so why not learn about this now? Our free catalog N-260 shows many other exclusive Tubular advantages of great importance to you. Also ask for free book, "Business Dairying," covering everything from calves to butter.

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Richest Farm Lands
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Are those found in Kings and Tulare Counties, where sugar beets, alfalfa and fruit return immense profits.

Dairying

proves highly remunerative and stock raising is better than banking. These lands are selling for $25 to $30 per acre. Profits follow improvements. Over $1,500,000 invested on lands owned, sold and developed by this Company.

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The center of this tract of wealth, is a magic town, provided with every advantage of railroads, water and electric lights, and is a marvel for its age.

Security Land and Loan Co.
357 South Spring St. Los Angeles, Cal.
Control These Lands.
Excursion Every Tuesday Night

Stock & Poultry FENCE
Many styles and heights; Diamond or Square Mesh; prices low. **Sold direct on 30 days free trial,** freight prepaid. Catalogue free.
KITSELMAN BROS.
Box 155, Muncie, Ind.

"Friendship, is a mutual understanding; love is a mutual misunderstanding."

A lady one day, being in need of some small change, called down stairs to the cook, and inquired, "Mary, have you any coppers down there?" "Yes, mum, I've two. But, if you please, mum, they're both me cousins!" was the unexpected reply.

Cream Separators, all sizes, all prices. See O. J. Weber. Co., 555-557 So. Los Angeles St., Los Angeles.

Live Stock and Dairy

By Mrs. Minna E. Sherman, Fresno, Cal.

ALL ABOUT MILK.

CHEMISTRY as a science has newly entered into the practical side of everyday life. The safeguarding of the food of the nation by the aid of chemical analysis of the food stuffs sold in the markets, has only been in use for the past decade.

The National Government has attempted to throw a safe guard around all food stuffs that were exported or imported. The states had each to pass their own Pure Food bills. This wave of feeling began long before that terrible book, "The Jungle," was written; it began in the pitifulness of the death of the wee babies in the slums from want of milk. The milk was furnished—when the want was found to be deeper; it was good milk, pure milk that was needed to stop the terrible mortality.

The cities resolutely took to enforcing the sanitary rules on the dairyman. He came first because the need of pure milk was recognized first, not because he was doing worse than the venders of other food products.

St. Paul's Baby Food.

Milk has been proven by chemistry to be a complete food, that is in balance for all creatures. St. Paul, wise as he was in the learning of his times, falls into the oriental error of thinking milk a light diet. He writes:

"Ye have need that one teach you again which be the first principles of the oracles of God; and become such as have need of milk, and not of strong meat. For every one that useth milk is unskillful in the word of righteousness; for he is a babe."

This was the view that the Hebrew took of milk.

Greek ad Roman.

The people of ancient Greece and Rome thought that men should not drink milk, but only children. The use of cow's milk might be said only to be universal today in the Anglo-Saxon countries. The white races regard milk, butter and cheese as necessary to a full diet.

The noble red man scorns the use of milk. I was told by a doctor the other day of how he was nicknamed "Papoose" by the Indians. A young buck had consumption and the doctor started to tell him what to eat, and said: "Drink plenty of milk." The Indian roused up and said: "Umph! Milk for papoose, I big strong man," and clapping his sunken chest walked away. The doctor soon found all the Indians were calling him "papoose."

Many oriental people are becoming milk users, and the demand for condensed milk has followed the English soldiers in many countries. California dairymen have been sending breeding animals in increasing numbers to Japan and Korea. The Koreans of the ranch all use butter. George, the boss man, tells me that at home they used the tinned butter, probably the renovated butter made from the bad store butter.

I often wonder where so much of it can come from, for there are seventy-five factories that are licensed by the Government. Did you ever know a farmer's wife whose butter was not gilt-edged? I never did. Yet where does all the bad butter come from?

Care of Milk.

The care of milk therefore, to keep it sweet, became a problem with the increasing use. The people demanded sweet milk delivered daily. The cities grew larger and larger and more and more demanded fresh vegetables and small fruits. The high prices of the near-by truck lands crowded the dairyman further away from the cities.

Now the wicked chemist came to the front. He found the chemicals that would keep milk sweet and yet give it no foreign taste. Simple substances often of low cost, figured as wonderful discoveries, and were sold at advanced prices, under fancy names, in brilliant cartons.

The dairyman's mail was full of circulars, post cards of the wonderful preparations, that were harmless. It was guaranteed to keep the milk and cream for twenty-four hours in the ordinary refrigerator. There was never a caution given that it was possible to use too much of the substance in the milk.

Neither was there a hint of the fact that it might be injurious to health. Indeed, the opposite was firmly impressed on the mind. I have, today, two letters asking me if I think it is fair not to allow dairymen to use preservaline when the butter-maker uses coloring matter and the cheese-maker rennet. This shows how little the dairymen understand today the "Why."

Oleomargarine.

There is no perfect law; exceptions and apparent contradictions exist everywhere in the world. Many people think the color in butter is the only way that it can be kept from imitation. It is a puzzling question to the advocates of the Pure Food bill. Some of the coloring matters formerly used were coal tar derivatives and therefore to be viewed with suspicion. Yet the coloring is its defense against the pure white oleomargarine. This is the only provision that prevents the use of this production instead of butter on the cheap resturant table. It defeats the packers in this way, by limiting the sale of it as imitation butter. The fight is now being waged to prevent the coloring of butter, hoping to bring the dairymen to terms in this way—man's inhumanity to man again to the front.

Pasteurizing of milk came into vogue for a short period. This was a laboratory success. In a commercial way the milk tasted unpleasant and did not raise a good cream. It also decreased the digestibility of the milk by destroying the natural lactic ferment. At present nearly everywhere the pasteurizing machinery stands idle.

Milking Machines.

The milking machine can be kept clean, and if this is done it will produce a raw milk of increased keeping quality. It, however, has one great disadvantage, you cannot see the milk until all is drawn, so that bloody milk and gargety milk may go into the lot.

I am not speaking of the effects of the machine on the milk yield of the cows, nor of the financial side of the expense of operation, but merely of the sanitary side. I can only hope the milking machine will be made perfect and cheap and that all will use it soon. It will remove a large part of the dirt from milk.

Humanity owes much to the fastidious man or woman; it is a great help to sanitary science that dirt is re-

Do You Know the Man Who Sells the Studebaker?

IT WILL pay you, before you buy a farm wagon, a buggy, a carriage, a vehicle of any kind or a set of harness, to

See the Man who Sells the Studebaker.

He has something of importance to tell you—of importance to your comfort, your safety, and your pocket-book.

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For considerably more than a half century, Studebaker vehicles, and more recently Studebaker harness, have held *first place* in reputation for high quality, long service, reliability and all that goes to make vehicles and harness dependable and serviceable.

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People buy the Studebaker for one reason only, and that reason is:

They have found out by experience that they can *depend* upon everything bearing the Studebaker name.

That's why the largest vehicle factory in the world is required to fill the demand for Studebaker vehicles and harness.

And by the same token that is why it *will pay you* to see the Studebaker man before you buy a vehicle or harness of any kind.

* * *

We don't ask you to buy on reputation *alone*.

We don't seek to over-persuade you.

We have no catch penny "special inducements" to offer you.

But we *do* insist that you owe it to yourself and your pocket-book to look into this vehicle and harness question *thoroughly*, before you give up your good money for an article that may or may not give you good service.

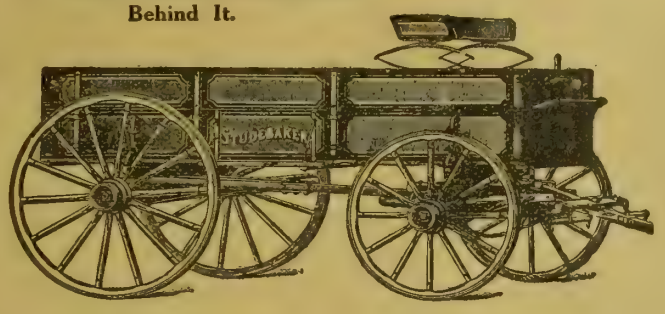
You don't buy a horse with your eyes shut,

You don't hire a man to work for you by the year until you find out something about him,

And you *ought* not to buy a vehicle or harness, until you know *what it's made of*.

And that's all we are urging you to do.

The Wagon With a Reputation Behind It.



Just go to the Studebaker dealer and *see for yourself* the good points of the Studebaker.

Find out *how* they are made;

Find out what *good materials* enter into them;

Find out what *infinite pains* are taken to guard every point of their construction;

Find out *why* they last so long and give such good service;

And you will be convinced that you *cannot afford* to buy anything but a Studebaker.

It means a saving of money to you,—in repair bills year by year, in long service, in safety, and in satisfaction.

SEE THE STUDEBAKER AGENT

and ask him for free copy of the Studebaker Farmers' Almanac for 1907.

If you don't know who he is write to us, and we will send you his name.

Enclose a two-cent stamp, and we'll send you the Almanac—Free. Please address Desk 78.

Selling Agents Almost Everywhere.

Studebaker Bros. Manufacturing Co., South Bend, Indiana.

Chamberlain's Perfect Chick Feed

World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This is the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

NOTHING JUST AS GOOD.

GERMAIN SEED CO.,

Pacific Coast Agents. **LOS ANGELES, CALA.**

SPECIAL PRICES ON TON LOTS.

De Laval
SEPARATORS
and APPARATUS
Make Cows Profitable
SPECIAL PRICES ON SEPARATORS
will interest you. We will tell you about them
and send you a Beautiful Calendar if you will state the number
of cows in your dairy and name of separator
you are now using, if any : : : : :
DE LAVAL DAIRY SUPPLY CO.
General Offices: DRUMM and
SACRAMENTO STS.
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107 First St. 123 N. Main St.
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LA FAYETTE STOCK FARM

The Largest Importers in America of

German Coach, Percheron and Belgian Stallions

Stock For Sale at Our Stables, State Fair Grounds

J. Crouch & Son

La Fayette, Ind.
Seattle, Wash.
Nashville, Tenn.

Sacramento, Cal.

pulsive to some people. Take the average man milking cows; he will wet the teats with milk, let the cows switch in loose manure and hair, then at the table will drink a quart or two of milk. Let the dainty person see a tiny speck of dirt in a glass of milk and it is not possible to swallow it.

Tuberculosis.

The crusade against diseased milk is particularly against tuberculosis. There are families today that will not use milk because of this scare. The use of tuberculine renders danger to us impossible. The old idea of waiting until a cow was suspected of having tuberculosis was wrong; every cow should be tested.

The veterinary will test cows for any one, but he will be apt to tell some of his friends if he finds a reacting cow, for a secret is something that one person knows and runs to confide at once to some one else, for a secret unshared affords no pleasure to the possessor.

This fear of publicity has kept the dairyman from calling in experts to his assistance. He has simply disposed of the thin, weak cows by killing and burying them, without inviting in a corner or jury to call it justifiable.

University Aid.

The University has recognized the unjust censure that publicity has brought upon the dairyman who is willing to have his cows tested and dispose of the diseased ones. He was the man who reaped the reward of having the disease after it had been stamped out, while the man with untested cattle had never had the courage to tackle the idea and no doubt had cows that would react, but he escaped all censure.

The College of Agriculture at Berkeley has again come to the rescue of the dairyman, by offering to put the use of tuberculin in his hands. The test is simple and the University now offers to send a representative to any group of dairymen and give full clinical instruction in the use of tuberculin. It is then intended that this group will in turn instruct their neighbors.

As if this was not enough, the University further will furnish the tuberculin and the chart. They ask that the chart be returned to them to be complied for statistics. Wil. your neighborhood be one of the first to send to the University for an instructor? I hope so. I hope the time will soon come when there are no untested cows in this state.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fere Outfits See O. J. Weder Co., 555-557 So. Los Angeles St., Los Angeles.

CONTROLLING TUBERCULOSIS.

The New York station at Geneva, gives the following summary of work done with a tuberculous dairy herd:

1—Tuberculosis is one of the most important diseases of cattle.

2—The Bang method of handling herds affected with this disease has been tried with success in various countries. This method is especially adapted to herds of valuable animals.

3—The method consists of isolating the reacting animals in order to stop the spread of the disease and holding them for breeding purposes.

4—Calves of tuberculous cows are rarely if ever tuberculous at birth. They should be immediately separated from the dam and fed on the milk of healthy cows or on milk which has been properly pasteurized.

5—The milk of tuberculous cows is safe after it has been pasteurized at 185 degrees F. (85 degrees C.).

6—More than one-half of the herd of the New York Agricultural Experiment Station was found to be tuberculous in December, 1900.

7—Quarters were prepared and the application of the Bang method begun in October, 1901, with a total of thirty animals, thirteen of which were healthy and seventeen tuberculous.

8—During four years this herd produced twenty-three desirable heifer calves, approximately one-half coming from the tuberculous animals, and in November, 1905, it contained thirty healthy animals.

Tuberculin tests should be made by competent veterinarians. This disease is more disastrous in the Northern and Eastern sections.

All cows do not like the same kind of food; neither will they do as well as they would on some other kind. Study the wants of the animal.

Go southwest, young women, and let some young ranchman make a home for you! A few quarter sections, all fenced, paid for, and well stocked, help make a happy honeymoon.

See Us for Sanitary Milk Bottles. O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

EUREKA HARNESS OIL

Makes harness proof against heat and moisture. Gives a glossy black finish. Prevents rot. Imparts pliability, strength and durability to leather. Saves bills and mishaps. Keeps a new harness looking new and makes an old harness look like new. Contains nothing rough to cut and chafe. For axle troubles use

BOSTON COACH AXLE OIL

Better and more economical than castor oil. Will not gum or corrode. Lasting, reliable, satisfactory. Highest Award World's Columbian Exposition. **Sold everywhere—all sizes.**

MADE BY

STANDARD OIL COMPANY
Incorporated

Tuttle's Elixir

Well nigh infallible cure for colic, curb, splint, spavin and other common horse ailments. Our long-time standing offer of

$100 Reward

for failure, where we say it will cure, has never been claimed. All druggists sell it. **Tuttle's Family Elixir,** the great household remedy. **Tuttle's American Worm Powder cures. American Condition Powders, White Star and Hoof Ointment.** 100 page book, **"Veterinary Experience,"** free. Be your own horse doctor. Makes plain the symptoms, gives treatment. Send for copy.

TUTTLE'S ELIXIR CO., 117 Beverly St., Boston, Mass.

Redington & Company, San Francisco, California
W. A. Shaw, 1209 W. Washington St., Los Angeles

FOR SALE—

PERCHERON HORSES
HOLSTEIN CATTLE...

2 Young Black Percheron Stallions
5 Young Holstein Bulls
10 Young Holstein Heifers
ALL REGISTERED

Minnewawa Stock Farm
Fresno, California.

VENADERA HERD
OF REGISTERED JERSEYS

FOR SALE—RICHLY-BRED YOUNG bulls from cow having High Official Yearly Records. Also a few heifer calves of best breeding. For particulars address

GUY H. MILLER,
French Camp,
San Joaquin county, Cal.

OAKHURST JERSEYS

Fine young Bulls, by a magnificent son of Golden Ferns, had out of imported cows. Also a bull calf out of a daughter of Golden Lad by a son of Golden Lad, making him 50 per cent. Golden Lad. We sold his full brother to the late Gen. Shafter, who won in every class he showed him in at Sacramento in 1905. Will sell at low prices considering breeding, to make room for new stock.

L. BRADBURY, Duarte, California.

Live Oaks Farm

Frank A. Meacham, Proprietor.

Importer and breeder of RED POLLED CATTLE, SHROPSHIRE SHEEP, RAMBOUILLET SHEEP, HORNLESS AMERICAN MERINO SHEEP. Both sexes for sale. Take electric car at Petaluma or Santa Rosa for LIVE OAKS STATION. Address all mail to

Petaluma, Sonoma Co., Cal.

For Sale Our Herd Bull Sargent Fox, 64833

As we have dispersed our herd, except a few heifers for home use, we are forced to offer for sale this valuable sire. We will sell him at a low price to a breeder who is in a position to give this bull a chance to make a record.

Leffingwell Rancho. Inc., Whittier, Cal

Thoroughbred Poland China Swine
Black Minorca and Barred Rock Poultry
High Grade Stock of Best Strains.
Young Stock For Sale.
M. Bassett - - Hanford, Ca

Thoroughbred Poland China Pigs and Shoats

of both sexes for sale at reduced rates for 30 days. Address

W. R. McCaslin & Son, Walsh Station, Sacramento County, California.

Geo. C. Roeding, Fresno, Cal., breeder of
Thoroughbred Holstein Bulls and Heifers
Thoroughbred Berkshire Boars and Sows

The Whiting Jersey Stock Farm Company

Is making the very best strains of blood fresh from the island of Jersey a specialty.

Whiting Jersey Stock Farm Co., Heber, San Diego Co., Cal.

John Lynch Breeder of Registered **Shorthorns**
MILK STRAIN
P. O. Box 321 - Petaluma, Cal.

When writing advertisers mention Cultivator

WEAK WOOL INHERITED.

Do ewes transmit weak wool to their offspring, or do they simply transmit those physical qualities that are responsible for the presence of weak wool?

It is the writer's belief that the latter is the case. Just as in the human family, consumption proper is not transmitted, but weak and poorly-developed lungs, which render the individual susceptible to the inroads of tubercular germs; just so in the sheep family, weak wool proper is not transmitted, but a weak physical condition which cannot resist exposure or overcome results of unwise treatment.

In the show ring, any breeding ewe that has weak wool is pretty likely to be excluded from the prize awards, and justly so, for she is not so valuable as the ewe that has a good fleece and is equally good as a mother.

However, this act of turning down the ewes with poor fleece is likely to carry with it the implication that the ewe is not desirable as a breeder, whereas, under certain conditions, this does not necessarily follow. If a ewe is functionally strong, has good heart lungs and other vital organs, and has poor fleece simply as a result of being too much exposed to the weather, or some other wholly unavoidable cause, she is just as good for a breeder as any other, for she most certainly will not transmit weak wool to her offspring.

Her own weak wool is not of her personal weakness, but rather of external causes which might have been controlled, but under which she could not hold her own. If her fleece is not strong, she is out of condition and her lamb and fleece this year may not be worth so much as that of a better-conditioned ewe, but she is not incapacitated for future service of a high order if properly cared for. Such a ewe may be bought cheap and good profits made from her.

Howecer, if inspection of the weak-fleeced ewe discloses physical defects and functional weakness, she should be avoided, for she is almost sure to transmit these qualities to her lambs, and they in turn will be an easy prey to those conditions that result in a weak fleece. Some sheep take cold every time a breath of air strikes them, and get out of condition easily. These are the ones whose lambs have weak wool, not because their mother had it, but because they have inherited their mother's tendency to easily get out of condition.

DAIRYING AND FERTILITY.

Lest dairymen forget the important relation between dairying and fertility, as compared with other branches of farming and live stock husbandry, I wish to call attention to some figures recently made public by the Ohio Experiment Station.

According to those figures, when a man sells $2 worth of straw from his farm he sells as much fertility, that is, removes it from the farm, as he would sell in $80 worth of butter. When he sells $18 worth of oats he removes as much fertility from his farm as he would in selling $325 worth of cream. In selling $20 worth of wheat at 80 cents per bushel, he loses as much as though he had sold $290 worth of cream.

Some people will believe an argument like this when you are selling grain or hay from the farm, but they say that there is very little difference in the effect upon fertility whether you keep cows or fatten steers or hogs, or, in fact, practice any branch of live stock husbandry.

The Ohio Experiment Station, however, is authority for saying that when a man sells $100 worth of beef at 5 cents per pound he removes as much fertility as he would in selling $500 worth of butter; also that when he sells $100 worth of pork at 5 cents per pound he sells as much fertility as he would if he sold $360 worth of cream. As a matter of fact, in dairying, in the selling of butter or of cream, very little fertility is removed from the farm. It is estimated that in selling a ton of butter not more than 50 cents worth of plant food is removed from the farm, and, if the butter was absolutely clean and pure, there would be none removed.—Colman's Rural World.

SKIMMING BY DILUTION.

When cold water is poured into fresh milk it dilutes the whole body so that fat globules have a better chance to rise.

Thus the cream more quickly appears and the diluted skim milk looks so blue that one is apt to conclude that the skimming has been very effectual.

The claim for the dilution creamers or "separators" so-called, is that you get the cream sooner than you can by deep setting in the milk can, and that you also get just as much cream as you could with a hand separator, and the cost of an expensive machine is saved.

Let the agent of these water creamers prove their claims in your presence. Let him have part of the milk to skim his way and you skim the rest with a hand separator. In six hours, test the skim milk of each for lost butter fat.

Remember that he diluted the milk with an equal amount of water. Then the skim milk is half water. Also the per cent. of fat found in that skim milk should be doubled, because it is unfair to call water milk. You will find no agent cares to make the comparison.

Skim milk that is half water is not fit to feed. A calf or pig has to drink too much of it to get the proper amount of nourishment. You have a pot-bellied dilution calf. The skim milk from the hand separator is warm and sweet and ideal feed.

The cream does not all rise in six hours, though the watered skim milk appears to have none of it. Better results are obtained by deep setting and waiting twelve or eighteen hours to get the cream.

Cream from dilution separators makes poor butter. Most well water contains bacteria, and some of it contains very bad kinds. These multiply rapidly in milk and impart bad flavors to the butter made from such cream.

In judging the water "separator" "judge not by appearance, but judge righteous judgment."—S. F.

Harry Snyder, Professor of Soils, Minnesota, states that the indirect value of manure is greater than that of a fertilizer. Chemical changes result from the contact of decaying manure with inactive mineral food in the soil, which render it available, besides prodcuing humus. Continuous grain farming uses up humus, making it less capable of holding moisture, and as there is no decay of vegetable matter, the time arrives when the soil must have a long period to recuperate itself.

Is it Purina Chick Food? It must be, it looks so clean and nice. I'm a Checkerboard Chick. See my ad, page 315.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

Great Land Opening in California

President Roosevelt has signed the Special Act of Congress granting our complete irrigation system 45,000 miner's inches of water from the navigable Sacramento River. Free water right; rich, black sediment soil; rail and steamboat transportation. All fruits and vegetables yield enormous returns.

10, 20, and 40 acre lots, from $30 to $100 per acre; terms one-sixth cash, balance in five years. For information and booklet, write **F. E. ROBINSON & CO., 216 P. E. Bldg., Los Angeles, Cal.**

BEDDING FOR COWS.

Liquid manure is worth more than the solid, but it is the part that is usually allowed to be lost. Try to have the cows well bedded, not only for their comfort, but that as much manure can be saved as possible.

The amount of bedding suggested for twenty-four hours by the Maryland Experiment Station is as follows: Cut corn stover, 4 pounds; cut wheat straw, 5 pounds; uncut wheat straw, 5 pounds; sawdust, 12.5 pounds, and shavings, 4.4 pounds.

Assuming a value of $5 per ton for corn stover, $5 per ton for wheat straw, 25 cents per ton for sawdust, and $6 per ton for shavings, the yearly cost for bedding for a cow stabled twenty-four hours is as follows: Cut stover, $3.65; cut wheat straw, $4.82; uncut wheat straw, $4.15; sawdust, 45 cents, and shavings, $4.81. Yet, these are economical to use, for they absorb fully $15 worth of liquid in the course of a year.

BAD TEMPER.

Uncle Silas, in Kimball's Dairy Farmer, hits the bad-tempered man who pounds his cow in a fit of temper, and condemns the same kind of a man who treats his correspondents or associates discourteosuly, when irritated.

He advises such men to follow the advice of President Lincoln in approving the course of Secretary of State Seward, who said he would write a severe letter to an offending official under him. When he had completed this, a work of art in sarcasm and invective, Lincoln advised him to tear it up and write a mild one.

Lincoln's purpose was to give Seward a chance to work off his temper. Uncle Si suggests that ill-tempered people write it down and then tear it up, before saying something to be afterwards regretted.

For a Good, Practical Milking Machine see the O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

When writing advertisers mention Cultivator

Publishers' Department

MAKE READY FOR HARVEST.

YOU owe it to yourself to consider in time as to how your crop is to be harvested. A little time given to considering the matter now, will enable you to be fully ready for grain and grass cutting. You should have all of your machines in the best of trim, so you can go to work in dead earnest. Getting ready for harvest is the most important thing after seeding. You can't afford to have things go wrong. Delays on account of breakage are expensive and exasperating. Machines that will not work right because of faulty manufacture are still more exasperating.

It is money in the pocket of farmers to buy the best machines that can be had. Particularly is this true with machines that concern the hay and grain harvest. This naturally calls to mind the Champion, Deering, McCormick, Milwaukee, Osborne, and Plano binders, manufactured by the International Harvester Company. There are a half dozen machines from which to choose. You may be urged to buy one or another, according to the local agent you may happen to deal with. A good many experienced farmers think it makes but little difference which one is selected. It is unquestionably true that no mistake can be made by choosing any one of the six.

They have all been on trial many years. All have been improved wherever improvement has been shown by experience to be possible. The International machines afford a good guarantee, perhaps the best guarantee to be had, that your busy harvest work will go on uninterruptedly, and that you will get all the grain, with little annoyance, and with the saving of all the unnecessary work possible for both man and team.

International agents are to be found almost everywhere. That is an important consideration, particularly when you take into consideration the necessary repairs, which are matters that frequently require most urgent haste, and which the local dealers make it their business to look after.

If you are not fully prepared for the coming harvest, look up one or more of the local International agents in your town, get the catalogues, make a study of them and then talk with the agents about the machines you will need. The agents will have the machines on hand to speak for themselves, and they will be able to answer all your questions.

HORSE ON HER.

"I want two pounds of paralyzed sugar," she began with a business-like air.

"Two tins of condemned milk."

"A bag of fresh salt. Be sure its fresh."

"A pound of desecrated codfish."

"Nothing more, ma'am? We have some nice horseradish, just in."

"No," she said, "it would be of no use; we don't keep a horse."

Life is worth living if we make it so by making it worth living to more unfortunate people.

When a man makes a jackass of himself, he is sure to be ridden.

Of course I like Purina Chick Feed, for I,m a Checkerboard Chick. See my ad, page 315.

THE TILTON APRICOT.

THIS apricot seems peculiarly adapted to Central California conditions and we have many letters from that section that are loud in praises. In apricot growing districts in the state it is a favorite with many, but does not seem to have been as extensively planted as in the country north of the Tehachapi. Reports before us, reaching from Riverside up to Napa, all speak in the highest terms of the fruit, putting it before any other sort.

J. W. Bairstow, Hanford, Cal., is advertising these trees. See his advertisement in Deciduous Department.

ROBBING HIS BOY.

Last spring a farmer found in his flock a lamb which the mother would not own. He gave it to his son, a boy fifteen years old, who saved it and raised it. The boy called it his all summer, all the family called it his, and it was his. But this fall when his father sold his other lambs he let this one go with them, and taking pay for it tucked it into his big wallet and carried it off to pay taxes or put it in the bank.

On this statement of facts the Manchester Mirror makes the following severe but just comment: "Now the farmer did not intend to do anything wrong, least of all did he intend to wrong his boy. Probably he did not give the matter much thought anyway, and if he did, he considered the boy's ownership of the lamb a sort of pleasant fiction, or reasoned that the boy, having all his needs supplied out of the fanily purse, did not need the pay for the lamb, and it was better to put it into the common fund. But for all that taking the lamb and selling it in that way, and pocketing the proceeds, was stealing. No, it was robbery, and, as between this boy and his father, one of the meanest robberies that could be perpetrated. Not only this, but by robbing the boy of that two dollars the father did more to make the boy discontented and drive him away from home than he can undo with ten times that amount.

A boy is a little man, and if he has got any of the gather and grip to him, when he grows up, he begins at an early age to feel that desire to own something, and to add to the property subject to his ownership, which is at once the incentive to effective work and the motive which reconciles men to their condition.

VALUE OF SMALL FARMS.

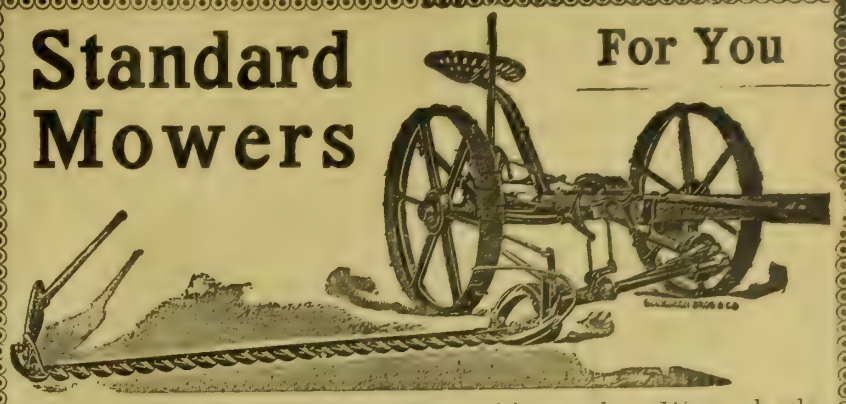
One of the most serious drawbacks to the development of the vast agricultural districts throughout California lies in the fact that much of the land is in large holdings, running into thousands of acres. Instead of being cultivated to its highest state on extensive ideas this land is given over to grain raising or grazing, and supports, at most, ten people to the thousand acres.

California's opportunities are wonderful, but in order that these opportunities may be taken advantage of to their completeness, it is necessary that every acre of her fertile land be cultivated to its fullest possibility. What may be done in this direction is well exemplified in the vicinity of Modesto where the great Turlock and Modesto irrigation canals have brought thousands of acres under the highest state of cultivation, and where hundreds of homes have been established on land formerly given over to broad and extensive culture. A country that formerly provided for but ten or a dozen people is now occupied by a family on every twenty or forty acres.

PEPPER.

Black and white pepper are from the same round seed of a tropical plant. The white is ground after the black outer skin has been removed. That is the only difference. The white is considered less irritating to the stomach. It is also preferred for dishes consisting of cream and milk, such as oyster stews, creamed potatoes and the like.

Standard Mowers For You



Lightest Draft and most durable machine made. High wheels, special removable clutch boxes, wide frame, roller, brass and ball bearings. Three motion gear with 22-cog gear clutch. Compensating lever, suspension spring and curved cutter bar. All the other STANDARD exclusive features.

Our haying tools are the tools for you. Write for hay tool folder.

Newell Mathews Co. Wholesale and Retail Wagons, Carriages and Farm Machinery

200-202-204 North Los Angeles St., Los Angeles, Cal.

Confident that a trial will prove the superior merits of

West Coast Stock Food

Beyond question the best condition powder made.
We will send to new customers one 25-lb.

$3.00 Pail for $2.00

or one 50-lb. $5.75 double sack for $3.50, and will prepay the freight to any point west of the Rockies. Not more than 50 lbs. to each one, and we reserve the right to withdraw this offer without notice when we have received all the orders we care to fill at these very low prices.

We are presenting no cheap premiums nor offering any gaudily colored pictures, but we are making this strictly legitimate business offer for the purpose of inducing more to try it. We thus hope to add to our large number of steady customers. We are charging up the difference and the freight to our advertising account, feeling sure that a trial of the goods is the very best advertising.

There are no strings to this offer. Just send us your name, your postoffice address, the freight station to which you want the goods shipped, mention this paper, and we will do the rest. Send money order or check with your order, and if everything is not exactly as represented your money will be refunded. The First National Bank of this city, or Bradstreet's Agency, or any leading firm, can inform you as to our reliability. WEST COAST STOCK FOOD has for many years been a standard condition powder in this section. See our full page adv. in the March 7th issue of this paper, or send for circular with testimonials.

MANUFACTURED BY THE

West Coast Stock Food Co.

818 San Fernando St. (Through to Alameda) Los Angeles, Cal.

EGGS FREE
If not as represented
SALSIPUEDES EGG RANCH
120 Acres devoted to poultry, fruit and dairying
S. C. White Leghorns; Ringlet Barred Rocks; Fishel Strain White Rocks
EGG $1.50 Per 15, $6. per 100
G. G. Redman, Watsonville, Cal.

1907 LOS ANGELES 1907
We won on White Rocks, Barred Rocks, White Wyandottes, Buff Leghorns, White Crested Black Polish.
EGGS FOR SALE. SEND FOR CIRCULAR.
Golden Crest Poultry Ranch.
Box 412 Santa Ana, Cal.

Eggs For Hatching
FROM
Standard Bred Poultry
Buff and Brown Leghorns, Buff Orpingtons, Columbian Wyandottes and Bronze Turkeys
W. W. Bliss, Duarte, Cal

Special Offer

JUST A WORD

ROSES

NOW IS THE TIME TO PLANT

In order to thoroughly place before the plant-growing public the undoubted superiority of our Montebello grown roses, we are offering all our finest varieties including the novelties, of last season in strong two-year-old plants at

$2.00 and $3.00

Per doz. according to size

PLANT NOW
AND SAVE MONEY

All in fine dormant condition, and cost less than half the price of balled plants.

We Ship to Any Point

Our New **Catalog**

The finest ever issued in Southern California, to be had for the asking.

SEND FOR IT NOW

Howard & Smith

Mail Address: P. O. Box 848
City Depot: Ninth and Olive

LOS ANGELES, CAL.

Nurseries: Montebello, Cal.

Leonard Coates Nursery Co., Inc.

ROSES Splendid assortment, field grown, $2.00 per dozen.
CARNATIONS 5-inch Pots, field grown, $2 per doz.
A New Walnut. Eucalyptus, Acacias, California Privet, Etc.
No Fruit Trees This Season.
CATALOGUE of strictly Pedigreed Fruit Trees, Etc., will be issued during 1907. Orders may be booked at any time.

Morgan Hill, Santa Clara County, Cal.

Our Specialties Washingtonia Robusta Palms, Phœnix Canariensis Palms, Grape Vines, Texas Umbrella Trees

Jurupa Nurseries

F. M. Borden, Prop'r **Riverside, Cal.**

White Rocks The best kind and the best of the kind. Eggs until further notice, 15 for $1.25 or $5.50 per 100.
White Plymouth Rock Ranch
T. J. Davis, Prop. POMONA, CAL.

The Ornamental Garden

By ERNEST BRAUNTON

SHADE TREES.

EVERY one has noticed how barren and desolate a home seemed when there were no shade trees, and that, in otherwise well-kept grounds, something was lacking to make the place homelike. On the other hand, how cool and restful and attractively inviting a home seems for having plenty of shade trees scattered over the grounds, particularly when they are supplemented with ornamental shrubs and vines and hedges!

In speaking of shade trees, perhaps the ones more generally thought of than any other are the acacias; and this is not strange, for there are now acacias everywhere throughout our land, including hundreds of varieties, some classified and many unclassified, but all adapted to our soil and climate.

SWEET WILLIAM.

The Sweet William of our gardens is Dianthus barbatus, a member of the pink family. It is one of the oldest of garden flowers; something is wanting if it is not found in the old-fashioned gardens. It possesses many charms endearing itself to all who love the old-time flowers. The blooms are of various colors, exceeding attractive, and the plants are free flowering. The Sweet William is really a perennial, but better results are obtained if it is treated as a biennial. Seed sown in July in the open border will furnish good plants for the folowing season's flowering. In addition to the many beautiful single varieties there are numerous double ones which continue in flower for a longer period. Never let the hardy border be without the dear old Sweet William.

HONEY LOCUST.

The honey locust, (Gleditschia triacanthos) in the forest usually attains a height of from 75 to 100 feet and a diameter of from two to three feet, with a well-proportioned trunk and crown. Under favorable conditions it occasionally reaches a much larger size. In the open it produces a short trunk and a broad, open crown.

The trunk and branches are armed with rigid spines from three to four inches long, which frequently grow in large clusters. These spines are occasionally objectionable, but can be removed by pruning if desired. Many trees are partially or wholly free from spines, and this form is, naturally, most satisfactory for shade purposes.

BORDER VERBENAS.

Where a showy border is desired there are few finer plants than the verbena, especially if the scarlet and the white are used, or the scarlet with the white eye.

In using the verbena it must be kept well in hand and pegged down and trained to grow the way it should or it wil be apt to "possess the earth" and cover everything in sight.

The more freely the flowers are picked— including always a generous amount of them—the more freely they will bloom. Like most of the border plants, the verbena will endure an immense amount of heat and drought.

Stella: "Isn't that Mr. Bachelor kind and gentle?" Bella. "That's just the trouble; he stands without hitching."

FENCE POST TREES.

In planting trees for fence-post production the first and most important requirement is the selection of suitable species. A fence post should be made from wood of moderate strength, able to hold staples well, and durable in contact with the ground.

Numerous trees have these characteristics, but to make a successful plantation and to secure early returns the species chosen should, in addition, be of rapid growth and well adapted to the locality. Nearly all the older forest plantations in the prairie states were made for protective purpose. Rapid-growing species, such as cottonwood and silver maple, were chosen. In many cases they were not adapted to the locality, and failed.

Those plantations which succeeded are now furnishing fuel and some lumber, but not the fence posts the market demands. In more recent years the importance of growing more durable timber has been recognized. A forest plantation may often serve both as wood lot and as a shelterbelt for crops, stock, and farm buildings. If trees suitable for fence posts are grown, they will furnish the desired protection and also yield a salable product.

OUR YELLOW PINE.

The western yellow pine, (P. ponderosa) is a very hardy tree and will endure great diversities of soil and climate. It is especially suitable for planting in dry regions where droughts are not too prolonged.

The conditions under which it usually grows prevent the tree from making a rapid growth. In the most favorable situations, however, its growth is fairly rapid.

Western yellow pine has suffered greatly from the attacks of bark beetles. The trees are usually attacked during August and September and die by the following spring. If a plantation is attacked by these insects, specimens, with description of the damage, should be sent to the Bureau of Entomology, Department of Agriculture.

Because of their long and heavy foliage, the young trees are sometimes borne down by deep snows.

The wood, which is light, strong, dense, and moderately durable, is the most valuable one of the Rocky Mountains and the most extensively used. Because of its dense foliage and ability to grow in close stands, the tree forms an excellent watershed cover.

"Gimmee some 'lasses, Sam."

"You musn't say 'lasses, "You must say molasses."

"What is you talkin' 'bout?" "How's I gwine to say mo' 'lasses when I ain't had none yet?"

One woman writes: "My husband disappeared three years ago. Please locate him among the killed at San Francisco, if possible."

Cock-a-doodle doo! I'm a Checkerboard Chick and these are two friends of mine. See our ad, page 315.

Morse seeds sprout..... You and nature do the rest

Seed

¶ Special offer— Collection No. 4
novelties and specialties from our new catalog

ONE PACKET EACH, of

Burgers Stringless Pole Beans	10c
New Baseball Cabbage	10c
Lettuce—Strawberry	10c
Pea—New British Wonder	10c
Eschscholtzia, Burbank's Crimson	10c
Sweet Pea, Countess Spencer	15c
Poppy, Shirley (Burbank's Strain)	10c
Heuchera, Christata (Burbank's)	10c
8 Packets (regular prices)	**85c**

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50c

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171 CLAY STREET
SAN FRANCISCO

ROSES

Plant Now
Strong, Field-Grown Roses
56 Varieties
To Select From. ***Price, $2.50 to $3.50 per Dozen,*** according to size. Write for List—it's free.

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The World's best layers.
Write for Folder.
J. W. Shade. **San Bernardino, Cal.**

SEND FOR FREE SAMPLES
and handsome booklet which tells all about
REX FLINTKOTE ROOFING
—the most weather-proof and best-wearing of **all** prepared roofs. Let us prove our claims—it means as much to you as it does to us.
J. A. & W. BIRD & CO.
89 India Street, Boston, Mass.
W. P. Fuller & Co., San Francisco, Sacramento, Los Angeles; Portland, Ore.; Seattle, Tacoma and Spokane, Wash.

Strawberry Plants TROPICO BEAUTY BRANDYWINE
$2.00 per 1,000, f. o. b.
Lots of 20,000 or more, $1.75 per 1000, f. o. b.
Lots of 100,000 or more, $1.50 per 1,000, f. o. b.
For Sale by the Grower,
D. Griswold Tropico, Cal.

Strawberry PLANTS
Headquarters For The
Burbank Beauty
A real beauty and the earliest and most vigorous of all strawberries. A good table berry and will ship further than any other berry. $3.00 per thousand.
Brandywines—The old standard variety of the southwest. Can fill orders by the thousand, hundred thousand or million. $2.00 per thousand. Plants carefully packed and we guarantee their arrival in good condition.
FAIRVIEW FARM NURSERY
G. H. HOPKINS, Prop. BURBANK, CAL.

Florists,—Nurserymen,
Etc., why pay $5 when $2.50 buys good
POTS POTS POTS
Formerly used by Chase Rose company, and are in good condition; 2-inch size only. Price, $2.50 per 1000, f.o.b. cars. No extra charge for packing.
Sample boxes containg 620 pots for $1.50 per box. Try a box
Write for price of 3x6 sash.
CHAS. HOWARD, 2121 Park Ave. Riverside, Cal

LOGANBERRY PLANTS
$2.00 per hundred, $15.00 per thousand. Crandall's Early Blackberry, Cuthbert Raspberry, Lucretia Dewberry, $1.50 per hundred, $10.00 per thousand. All plants carefully packed.
Fairview Farm Nursery
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STRAWBERRY PLANTS
800,000 Brandywines
400,000 A1
20,000 Pride of Michigan
All grown from Kellogg Stock and guaranteed First-Class Plants. Write for prices.
F. P. BALDOSSER, Covina, California

LOGANBERRY PLANTS
Per 100 $1.75
Per 1000 $13.00
F. O. B. Long Beach.
H. H. Hart, Long Beach, Cal.

Cuthbert Raspberry Plants
Strong Roots $1.00 per 100
$6.00 per 1000
A. E. NELSON, EL MONTE, CAL.

Weed Process COMB FOUNDATION
—AND—
BEEKEEPERS' SUPPLIES
Wax exchanged for foundation or bought for cash
H. J. Mercer
731 East Third St. - Los Angeles, Cal.

Woman is a strange and puzzling creature, who is always giving new perplexities to man. Woman makes you think she thinks what she doesn't think, and the best thing to do is to think she doesn't think what she seems to think.

The Vegetable Garden

By ERNEST BRAUNTON

THE AVERAGE GARDEN.

A VERY large majority of the homes throughout California, whether, urban or rural, have near at hand an inclosure called "the garden." As spring approaches last year's growth of weeds are piled and burned, the surface of the soil stirred, and potatoes, peas, corn, beans, onion sets and tomatoes are planted.

When these are in danger of being crowded out by weeds they are cultivated. As the time for them to reach edible maturity approaches, cultivation ceases, weeds take possession and hold undisputed sway until the following spring, unless a portion of them are plowed and turnips broadcasted for early spring "greens."

As a consequence of the practice, only vegetables inferior both in quality and quantity are produced, discouragement follows and the garden is abandoned or converted into a calf pasture.

This is no pen picture of the imagination, but a statement of actual conditions common in this and other states. It is true, however, that there is an occasional well kept garden, yielding in variety and abundance throughout the greater portion if not all of the year. While all are lavish in their praise of such a garden, it rarely occurs to them that they might read the object lesson and follow the example. There is no reason why the California vegetable garden may not be made to yield every month in the year.

SEEDS AND SEED SOWING.

There is no point in horticulture in which so great an improvement has been made in this country as in the quality of the seeds offered for sale to the gardener. The art of seed-growing is better understood, and the requirements of our climate have been studied by practical men.

The writer can well remember when dealers prided themselves that the seeds they offered were "English" seeds, not knowing that with many plants American-grown, and more especially California-grown seeds, are infinitely superior for our use.

In the days of the old "Early York" cabbage we remember with how much of uncertainty the seed were sown, not knowing whether any of them would make a solid head. And not until the "Early Jersey Wakefield" cabbage was developed from the English Wakefield, by continuous selection in our climate, did growers fully realize that for certainty of crop it was necessary that cabbage seed for American use must be grown in America.

The question of climate in its relation to production has been more closely studied of late years, and no well-informed gardener now supposes that all the seeds he needs can best be grown in one climate, though California is well to the fore. There are many seeds that do not reach their best development as crop-producers in the east, in any given locality, when they are grown far north or south of the latitude where they are to be sown. But this does not apply to our state. While the market gardener can seldom afford to grow his own seed, there are many which he can generally produce to advantage, if unable to get them from a reliable grower in his own latitude and elevation, for elevation above the sea as a rule, has the same effect on many crops as a high latitude.

CHANGED CONDITIONS.

Until within comparatively recent times the introduction of foreign species worthy of cultivation in this country was largely confined to horticulturists, who maintained private fruit gardens or nurseries.

In fact, prevous to the establishment of the state experiment stations by Congress, in 1887, an important function of the work of the nurseryman was the introduction and testing of new sorts, both of foreign and domestic origin. While the commercial dissemination and popularization of fruits is at present almost exclusively in the hands of the nurseryman, the introduction of foreign species and varieties, as well as the testing of both foreign and domestic sorts, has fallen largely into the hands of the Department of Agriculture and the experiment stations.

The general perspective of fruit culture in America has been greatly changed during the last twenty-five years, and many of the lines of work carried on in private fruit gardens have been absorbed wholly or in part by other forces; yet the profitable occupation of fruit growing is ever open to the amateur, to say nothing of the highly interesting work of plant breeding.

MELON DISEASES.

Several diseases attack the leaves of cucumbers and melons in this country. Downy mildew, leaf-blight and anthracnose are the most common, though there are several others of less importance. The parasitic fungi which cause these troubles are quite distinct in their nature, but produce rather similar effects on the foliage.

From the standpoint of the farmer they may be considered together, since the treatment for all is practically the same. It is well to know their exact characters, however, especially since there are a number of other maladies, due to bacteria, soil and climatic conditions, and to insects, which do not yield so readily to spraying, and may be confused with the disease to be described.

AMATEUR FRUIT GROWERS.

The testing of varieties in new localities and the development and dissemination of new sorts by the amateur is an important work, but the greatest good accomplished by him is to be found in the wholesome influence which he exerts on the community in which he lives.

A community is certain to profit aesthetically as well as financially from the influence of such growers, and it is to them that we owe our appreciation for high quality. A discriminating taste developed in a neighborhood creates a demand which it pays well to gratify, and the amateur who grows fruits for quality will find a ready market in such a section.

You'd better see my ad, page 315, for I'm a spunky little Checkerboard Chick.

Seeds Plants Fruit Trees.
Most complete stock in the West, embracing everything new of decided merit in both vegetable and flower seeds. Headquarters for Eucalyptus and other tree seeds. Full line of Fruit Trees and Ornamental Stock. ***Write for Our 1907 Catalogue.***
Poultry and Stock Foods
We carry the most meritorious foods on the market, many being recommended by the U.S. Experiment Stations as containing the highest percentage of protein, which is the principal factor in egg production. ***Write for Our New Poultry Catalogue.***
Germain Seed Co.
326-330 So. Main St. Los Angeles, Cal.

SEED
OF THE BEST QUALITY PLANTS AND BULBS
THE NEW SEED STORE
Everything Fresh and of highest Quality.
SEND FOR CATALOGUE
Morris & Snow
555 SOUTH MAIN ST.
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ESTABLISHED 1889
Geo. B. Warner
Orange County Nurseries
Grower and Dealer in Citrus and Deciduous Trees of All the Standard Varieties
Grafted Walnut Trees a Specialty. Budded Loquats, Roses, Grape Vines, Berry Plants, Cypress, Etc. Street and Ornamental Trees, Shrubbery, Blue Gums. Only clean, healthy stock offered
Residence, 202 E. Tenth St. Telephone S. S. Red 92. **Santa Ana, Cal.**

Crimson Winter Rhubarb
Original Burbank Strain
$1.50 per Doz., $6.00 per 100, $40 per 1000
Now is good time to plant. We are the only Rhubarb Specialists on the Coast. We devote most of our time to its cultivation and improvement. We have the Best pedigreed plants ever offered of this wonderful money maker. Write or call on
J. B. WAGNER, the Rhubarb Specialist, Pasadena, Cal.
A Fine Stock of Superlative Raspberry, also Fruit Trees and Vines of All Sorts. Both Phones.
P. S.—See Article in Cultivator on Page 550, issue of December 6th.

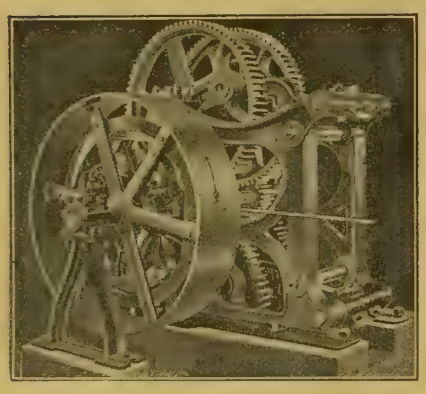
GRAPES
Come into bearing the second year after planting. Why plant fruit trees and wait four years. Our vines are Pedigreed Stock, true to name, healthy, thrifty and graded.
Money Makers:
Red Emperor — True Spanish Malaga
Black Cornichon — Thompson Seedless
Write Us for Special Prices on These Varieties
The Fresno Nursery Company
Box X42, Fresno, California

GRAPE VINES
Pierce Isabella Table Grapes; 1200 two-year old and 400 one year old; fine rooted vines. Write for prices.
Barbour Ranch **San Gabriel, Cal.**

Burbank Crimson Winter Rhubarb
Plants and Seed for sale in any quantity. Warranted the genuine article. Orders filled promptly
A. L. Fratt, Ventura, Cal.

500,000 Brandywine Arizona and Klondyke **Strawberry Plants**
At bottom prices. All first-class and from the cas best spring. G. W. Mullendore, Covina, Cal.

The Pomona Pumps Are Best



for City Waterworks and Irrigation

BECAUSE—

Using machine cut and slow running gears, they are

PERFECTLY NOISELESS.

They use stepped gearing with no break in the tooth contact, doing away with all rattle and vibration.

BECAUSE—

They have an ideal motion of the pump rods, which consists of a uniform continuous slow up motion, a smooth, quick down movement with absolutely no jerk in starting the rods upward eliminating all rod breakages and valve troubles.

BECAUSE—

They will save you money in cost for power. We use machine cut gearing which alone saves ten per cent. We have a leverage in our gearing which other pump makers do not have and which they do not tell you about when trying to down us.

BECAUSE—

In pumping through long pipe lines, they deliver a continuous steady stream.

They do not hammer out your pipe line by irregular pulsations of the water column.

They save power by keeping the water in continuous motion.

BECAUSE—

They are fitted with improved oiling devices that can be filled without stopping. Pumps may run for weeks continuously.

BECAUSE—

We have advantages in our pumps that investigators appreciate at once, consequently, where one goes others follow and we are fast taking the country.

BECAUSE—

We give a guarantee of satisfaction with every plant.

Send for catalog.

Pomona Manufacturing Company

Makers

Pomona, California

Irrigation and Pumping

IRRIGATION IN CALIFORNIA.

IRRIGATION should be recognized as an agricultural art of very wide applicability and value. Its association with the idea of desert reclamation has blinded the public mind to its value for regions where the need of reclamation does not exist. Irrigation is a means of soil improvement to be employed, like other means of improvement, when the soil needs it.

Water is the most important food of plants, not alone because it enters in such volume into their tissues, but because without it in adequate amount the plant cannot use other foods in sufficient quantity. No one questions the wisdom of the saving and storing of manures, nor the wisdom of generous outlay for commercial fertilizers when required. The same is true of soil improvement by means of drainage. There should be a similar feeling in regard to irrigation.

The most diligent culture and the most generous fertilization are often made of no avail, and actual loss is sometimes incurred, because the farmer has not prepared himself to supply water when needed. The water, which he could often provide for a mere fraction of his expenditure for fertilizers, often for less annaul cost than the interest on his investment in underdrainage, he has neglected to have ready for use, and he sees the hope of return for his year's labor and expenditure fade away during a few weeks of drought.

There have been cases where water has been stored at considerable expense as a protection against fire in barns and has remained unused while some valuable crop was burning up in the garden. Such losses are largely due to two things: First, the notion that irrigation is of importance only in arid regions; and, second; ignorance of the ease and cheapness with which a farm water supply can be stored and distributed. It is very important that the value and availability of water for irrigation should be recognized and a supply provided on each farm.

Irrigation, moreover, is not merely a recourse to insure the safety of a crop. It has been demonstrated beyond question both by practical experience and by systematic experiment that growth and production can be profitably pushed by irrigation even when the natural moisture seems ample, and in this respect irrigation aligns itself with fertilization and cultivation as a factor in intensive culture.

Another error grows out of the large scale upon which irrigation is generally known to be carried on, involving canals and ditches too expensive for individual undertaking. The impression is made that considerable capital and engineering skill are necessary to success; but as a matter of fact profitable irrigation is easily attainable by small effort.

It lends itself readily to small individual or co-operative undertaking, developing water whose presence may be almost unsuspected, or utilizing water which ordinarily is either wasted or is a positive detriment when not turned to profitable service. It is the purpose of this bulletin to present suggestions for irrigation of this kind.

Small irrigation works usually require neither greater skill, labor nor outlay than other farm improvements which are readily undertaken. They do not require as exact engineering as underdrainage by tiling, and the whole system, both for development and storage of water, often costs much less per acre of the area irrigated than does tiling.

The work is more readily comparable to the construction of open drains, coupled in some cases with reservoir building, which is no more difficult than cellar excavation and is accomplished with a similar outfit of teams, plows, and scrapers. The man of ordinary skill in handling these tools, who can turn a straight furrow, or build a straight piece of fence, and can do these things well, needs only a suggestion of the feasibility of securing a home water supply for irrigation, providing his conditions are favorable.

The first thing to be done in all cases is to make a careful study of the whole situation, the location of the water supply, the lay of the land, and its requirements of water, etc.—Prof. E. J. Wickson.

RELATION OF SOIL.

The desirability or irrigation is unquestionably, in many cases, conditional upon soil depth and character. This relation has received careful attention from soil physicists, and, although an understanding of it involves problems of plant growth and the movement of water in soils, the leading facts are available in popular form.

An examination of the data in the table shows the prevalence of irrigation in localities where fruits are grown on light loams, whether the soils have resulted from local disintegration of rocks or have been transported to their present locations. This is merely wider proof of the fact of ordinary observation that, other things being equal, the coarser and less retentive the soil the greater the necessity for irrigation; but the fact is strikingly presented in a number of cases. One grower at The Dalles, Ore., is located on an upland loam, dark brown, formed of decomposed basalt at the base of slopes from ten to fifty feet in depth—a soil holding moisture well and producing fruits without irrigation. Another grower has reclaimed a sand flat along the Columbia river by irrigation, and is growing tree fruits profitably on land which originally was hardly worth $1 an acre, but which his work has made worth one hundred times that amount. Here the character of the soil was an important factor in determining the necessity for irrigation. Another striking contrast is shown in four neighboring localities in the Sacramento valley, California. Elevation, rainfall and exposure are similar, yet in two cases irrigation is practiced and in two it is not. The explanation here is the occurence in the two irrigated districts of an impervious hardpan, locally called "bedrock,' which is so near the surface that the shallow layer of soil cannot retain moisture enough to maintain growth and fruiting in the dry season.

Hurrah for me! I am a Checkerboard Chick. See my ad, page 315.

I put MACBETH—my name—on every lamp-chimney I make.

If I did not make as good chimneys as I do—and did not have the confidence in them that I have—I would send them out as most other makers do—unmarked.

My Index tells of lamps and their chimneys, fully and interestingly. Let me send it to you—it's free.

Address, MACBETH, Pittsburgh.

Gold Medal Citrus Trees

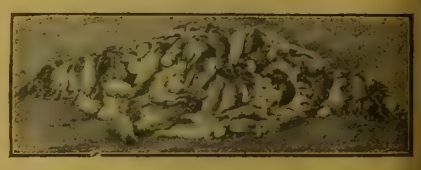
Are fully described in our treatise of Citrus Culture, which is a trifle the best thing of its kind ever published. Contains about 50,000 words and 100 illustrations telling about oranges and lemons from the seed bed to the bearing orchard. Price 25 cents. Remember we are the largest producers of Citrus Trees in the world and stand ready to serve you with the finest nursery stock that can be grown. Correspondence invited.

San Dimas Citrus Nurseries

San Dimas, Cal.

R. M. Teague, Prop.

Now is the time to go for gophers with Bille's Gopher Poison. The gophers go for it and it will go for them good and plenty every time.



This is a photo of 201 killed in one day on a ten acre field before they could get back to their holes, with one bottle of

BILLE'S GOPHER POISON

Endorsed by Agricultural Colleges and Experiment Stations. Not one of the ordinary poisons, but in a class by itself. Has had greatest success in the Middle West. The secret being that it is most attractive to gophers, squirrels, etc., and sure death to them. It gives the grain a glossy coating, retaining the poison for weeks. Hundreds also die in their holes by eating it there. We have bought the patent rights for this section and are selling at the eastern price of $1.25 for large bottle. The ingredients cannot be bought at a drug store for that price. Money refunded if not as represented—so printed on the bottle. If your dealer does not keep it send $2.50 for two bottles, express prepaid by us.

We do not send less than 2 bottles.

Compounded under Bille's patent by

West Coast Stock Food Co.

818 San Fernando St., Los Angeles, Cal.

Eggs for Hatching

Thoroughbred White Rock eggs for hatching at $1.50 for 15, $6 per hundred.

Mammoth Bronze Turkey eggs, 20 cents each.

Also a dozen choice W. R. cockerels and two M. B. gobblers for sale.

Jennie R. Frater Charter Oak, Cal.

Home Phone 2179

THOROUGHBRED S. C. White Leghorns

They are vigorous and healthy and great producers of large white eggs. They have good size, rich yellow legs and bills. Eggs from special mated pens, $1 per 15, $5 per 100

W. R. BENJAMIN

28 Palmetto Ave. Sacramento, Cal.

BARRED ROCKS

EXCLUSIVELY

Send for Sixteen-Page 1906 Catalogue

H. R. CAMPBELL

BOX O PETALUMA, CAL.

CROP REQUIREMENTS.

It is not very generally understood how large an amount of water is required for the production even of fair crops; for the maximum of possible product is rarely obtained on the large scale, because it is not often that all conditions are at their best at any one time and locality. But from numerous observations, made both in Europe and in the eastern United States, it has been found that from 300 to over 500 tons of water are on the average required to produce one ton of dry vegetable matter. In Wisconsin, King found that a two-ton crop of oat hay required over one thousand tons of water per acre, equal to about nine inches of rainfall. The average rate for field crops at large is given by European observers at 325 times the weight of dry matter produced, being at the rate of about three inches of rainfall actually evaporated through the plant.

These data should enable us to estimate the adequacy of the moisture contained in the soil at the beginning of the dry season to mature the crop, provided we make due allowance for any growth already made at the time, and provided also that the estimates as to the water-requirements derived from the experience of the countries of summer rains (the humid regions) hold good for the arid region also.

ELEVATION AND EXPOSURE.

It is clear that elevation does not alone determine the necessity for irrigation. The table shows it to be practiced from twenty feet above sea level on the Coast plain of Orange county, Cal., to 5000 feet above sea level in Inyo county, Cal., and in southeastern Idaho. Nor is height above local river bottoms a ruling factor, for it is resorted to both on river bottoms and several hundred feet above them on the slopes of adjacent foothills. The same is true of exposure. The table shows irrigation on all slopes and on lands practically flat. Both exposure and elevation are local factors of some moment, however, when they coincide with other conditions, as will be shown later.

The first turbine steamship ever built in the United States was launched at the Roach shipyard at Chester, Pa., in April last. It was christened the "Governor Cobb" and will ply between Boston and New Brunswick. It is 290 feet long and contains 175 staterooms.

"Why can't I get my number?" demanded the man.

"Line's busy," replied the telephone girl.

"I don't believe it."

"Its so, just the same. Some cowboys have borrowed it to hang a horse thief with."

Applicant—"I see you advertised for a janitor, sir. I am a married man—no children; neat, honest, patient and tactful!"

Agent—"I regret to say you would hardly do for a janitor, my friend, but wait. Couldn't I get you as a tenant?"

Mistress—Idon't want you to have so much company. You have more callers in a day than I have in a week.

Domestic—Well, mum, perhaps if you'd try to be a little more agreeable you'd have as many friends as I have.

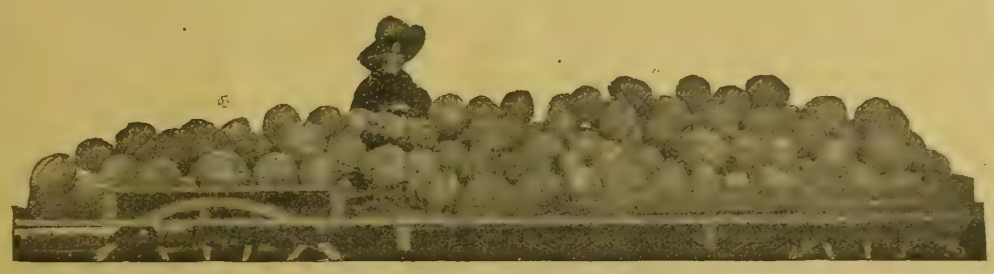
"The hen that lays is the hen that pays."

The New Melon

HAS BEEN NAMED THE

J. & M. Christmas Melon

By Charles Richardson, of San Gabriel, Cal., who was awarded the $5.00 offered by Johnson & Musser Seed Co. for the best name for the New Melon. **Price—Per oz., $2; per pkt., 50c.** Sold only by Johnson & Musser Seed Co.



The Most Popular Musk Melon on the Los Angeles Market. For Two Years

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Last year was the first season this excellent sweet corn was grown extensively for the market, with the result that the newspapers commented upon the unusual excellence of the sweet corn offered by the peddlars. No market gardener will now grow any other variety because Oregon Evergreen Sweet Corn will yield nearly double the crop of any other variety, is less liable to the ravages of the worm and, once having tasted this, the consumer will have no other. **Price—Per lb., 15c; per 100 lbs., $8.00.** Sold only by Johnson & Musser Seed Co.

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Anaheim Chili

Nearly ten inches long

In this chili Southern California should feel a personal pride. It is of local origin, and as we are always on the lookout for the best of everything we discovered this excellent pepper, already popular in the Anaheim section, but little known elsewhere. We now buy the peppers and take the seed from them, so we are enabled to positively guarantee our seed true to name and the best of its kind. **Price—Per kpt., 25c; oz., 25c; per lb., $2.50.** Sold only by Johnson & Musser Seed Co.

The Up-To-Date Seed House

Johnson & Musser Seed Co.

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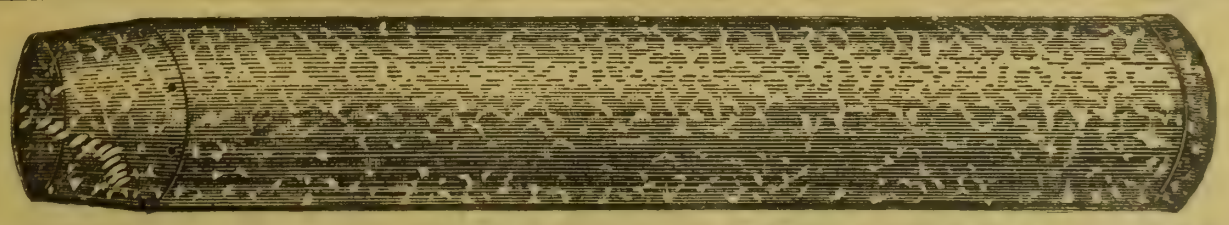

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California Cultivator

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COUNTRY LIFE.

All parents in the country should teach the boys and girls to be proud of their homes. The country schools are, in many cases, better than city ones with multitudes of studies, for they teach freedom of thought and independence in study that are unknown in the great city machinery of the public schools.

The country churches may lack some of the eloquence and musical frills of the city organizations, but they are still doing good work and need all the help and encouragement it is possible to give them. With trolley lines, telephones, good roads, free delivery and comfortable carriages, the country people are better off today than ever before in the history of the nation.

If only the inhabitants of the farms could know how many agricultural papers are taken by city people and how the men and women shut up in stores and factories long for the fresh air and sunlight of the country, they would learn something of the advantages of their own homes.

LEMON STUDENT HERE.

Dr. Rodney H. True of the United States Department of Agriculture is here to study the character of our lemons, with headquarters at Riverside. He is pursuing his work most quietly and few know of his presence. He only expects to do what might be termed foundation work, this season, but next season hopes to take up practical demonstration. Mr. J. H. Reed writes that he believes his coming will prove as much of an era in the lemon industry as has Mr. Powell's work with the orange. If this proves true it will mean hundreds of thousands of dollars annually put into the pockets of our lemon growers.

RATHER COMPLEX.

Mr. E. D. Taylor, editor of the Hollywood Citizen, is becoming a student of the dairy cow. Under date of March 14th, he propounds to the Cultivator a series of academic questions which we confess puzzle us not a little, to return satisfactory replies.

We quote his letter: "My heifer is of a brunette complexion and sunny temperament. She was for a year a boarder in a 500-acre pasture over in Lankershim. Half of this pasture was straight up hill and the other half was straight down hill and in reaching for the elusive herbage the heifer became delicately etherealized and unduly active. I desire to obtain some information. During the intermittent ceremony of milking, the heifer poises herself gracefully on two or three limbs, and waves her remaining members around in the air. I should like to inquire whether this habit is sporadic or endemic? It interferes so seriously with that steadiness, which is the most admirable quality in a milk-pail, as to be really quite undesirable. Likewise she has an inordinate ambition to occupy the same space in the stall, which I am striving to occupy myself. This you will understand is impossible; any fool can see that and it leads to complications. Also she pays no more attention to a stake than a pupil in the first reader does to a period. When staked out and wanting a change of scene, she walks off with the stake and so much of Southern California as adheres to it. Then she goes calling among the neighbors and is not, I am free to confess, a social success. There is no lack of warmth or enthusiam, so far as I can see, in the reception given to her, but there is to be detected an absence of cordiality. It is my desire so to train this young creature that she may be elevating in her influence on those who come in contact with her, and at the same time add to the beauty of the landscape. Possibly you can give me some suggestions. If you are able to balance an old-fashioned clothes rack on one corner and whirl is rapidly it will give you a reasonably clear idea of the central motive of the theme to be elaborated. Failing of advice then could you call the attention of your bovine department to the matter?

"Thanking you in advance for your kindly help, I am,

"Yours Very Sincerely,
"E. D. TAYLOR."

It is difficult, with the data at hand, to diagnose the case of your cow with certainty. The fact that she is a brunette is against her steadiness of demeanor, for physiologists tell us that brunettes are of a more nervous disposition than blondes and more easily affected by uneven conditions. If her milker is possessed of a mild and forgiving disposition, one which bears affront (a kick) with unruffled temper, it is possible, in time, the heifer may be domesticated sufficiently to permit of affectionate handling. It is possible you are too dextrous with the milking stool. We would suggest that you use it for the purpose for which it was originally designed. The cow doubtless will be better satisfied and therefore more docile.

The fact that the pasture she has been wont to graze in is so abrupt, may have something to do with her desire to "be up in the air" so frequently. She has been educated that way. The habit doubtless, is neither "sporadic or epidemic," but generic.

Her desire "to occupy the same space in the stall" with you shows that she is of an affectionate temperament. We would advise you to cultivate that disposition, but at a respectful distance, at first, in obedience to the well-known law that "two bodies cannot occupy the same space at the same time"—without inconvenience to the weaker of the two. This suggestion is offered in the interest of hygiene. As to her utter disregard of the controlling virtues of the stake, you might give her a rudimentary lesson in discipline by tying the rope around yourself and giving her the advantage of field exercise, being sure that your legs are in proper length proportionate to those of the heifer. The exercise, by the way, might be beneficial for both. The experience will certainly not go for naught in your own case at least, as we feel sure that it will give you an intimate botanical knowledge of grass roots and things.

BACK TO THE SOIL.

Scarcely an agricultural paper printed in America today that is not advocating the doctrine of putting boys and girls on the farm for industrial and physical training.

The argument is based on two grounds, viz: The necessity for manual training among the boys and girls, which they do not get in town, and the importance of a practical education along lines promotive of intellectual broadening.

The age in which we live is purely a commercial one, and the health of the body has been neglected to such a degree that the present generation of children is affected physically, we mean the physical body has been neglected for the acquisition of wealth.

The second argument is that our towns and cities are becoming congested, over populated, especially in the manufacturing and mercantile centers. In Great Britain and France, statesmen are giving this subject careful consideration, and the opinions they express is that the future condition of the world points to a serious problem as to what shall be done with the youth in providing means to obtain a living. These economists, who are statesmen, figure that with a period so short as the life of the present generation the end of manufacturing growth will be reached in the glutting of the world's market through overproduction.

One authority states, "that already Europe faces a 'yellow peril' in the industrial competition of Asiatic races, which may be as disastrous to European manufacturing supremacy as a war. That the attractions of the cities draw the rural population as does a brilliant flame the moths—the end, destruction."

In France leading members of the government are described as being especially active in measures for holding the rural population to the farms, by making country life more attractive, by improving the rural public schools and by encouraging the formation of co-operative societies among the farmers, for cheapening transportation, economizing labor and securing from the middlemen for the producer a larger share of the profits on his products.

A writer in the Boston Transcript regards this co-operative movement as "the most important of all instrumentalities at work to keep population 'on the land.' The societies in 1903 numbered 600,000 members, and their successes were marked."

"In Great Britain, John Burns, as president of the Local Government," says the same writer, "is making strenuous efforts for the relief of the congested population of cities. The sympathy of the Liberal party is with him, and the ministry is endeavoring to pass a measure for the benefit of tenant farmers, which in effect proclaims 'that the farmer and his men, the bone and sinew of the rural regions of the country, should no longer be forced to live on the sufferance of great landlords whose idea of their land is that it is primarily intended for their sport." Lord Carrington, speaking for the ministry, recently declared that the great object and ambition of the Government is that it "shall not come to an end without having done something to get the people back to the land, two or three or four back to the land where at present there is only one." And the prime minister declares that the land must become "less the pleasure ground of the rich, and more the treasure house of the nation."

REMOVAL OF THE CAPITOL.

The proposition to move the State Capitol from Sacramento to Berkeley is to be submitted to a vote of the people. The legislature has so decided and the governor has signed the bill.

The next proposition, we suppose, will be to divide the state. The question is now being discussed quite generally and may assume definite form before the next legislature convenes.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

12.79 is Springville's rain record.

Oxnard has had 17.41 inches of rain.

Redlands' rain record to this time tallies 20.51.

The rain to date registers 16.07 inches at Corona.

At Las Posas 20.61 inches of rain has fallen to date.

Riverside has had 13.83 inches of rain so far this season.

The Chino Land Company reports sales of land to 17 new buyers last week.

The barley harvest began at Imperial last week—what section can beat it?

John Corwin has planted 50 acres of grapes and 50 acres of asparagus at Imperial.

At Chino.—J. B. Garat has got in 800 acres of grain and J. H. Creider about the same.

C. H. Willard of Santa Paula had 14 acres of orchard land washed away by rise of the river.

A heavy rain fell at Chino Monday night, dropping 1.55 inches by the S. P. guage. Total fall to date 23.47.

The rainfall for the last storm at San Fernando, amounted to 3.12, making a total of 21 for the season.

The Government rain guage at Sunland, in the San Fernando valley, has so far registered 24.57 inches for the season.

Coachella valley alfalfa hay yields from eight to ten tons per acre. Sells in the valley from $8 to $14 per ton.

Coachella shipped a full car of cabbage for which the growers received 90 cents a hundred pounds hauled to the platform.

Since the last report Coachella has shipped two more carloads of cabbage for which almost phenomanal prices were obtained.

The express shipments for the week were 164 cases of eggs, 1105 pounds of chickens, 1980 of cream and 515 of butter from Escondido.

Yesterday there went from Santa Ana to Los Angeles, 73,800 eggs. This one day's shipment of hen fruit brought the chicken people of this vicinity $1100.

A. T. Mann at Thermal shipped another hundred turkeys to Los Angeles this week, and will ship two hundred more next week and the week after.

James G. Cortelyou of Imperial sold thirty head of fat hogs for $7.35 per 100 pounds, this being the highest price yet paid for hogs in the valley and indicating a steady upward tendency in price.

A new outbreak of Texas fever in Riverside county is reported by Dr. W. C. Rayen, county veterinarian, who has discovered about three hundred head of infected cattle near Rincon, close to the San Bernardino county line.

The railroad surveyors are quite busy in the Yucaipe and Oak Glen country, and when the road is built that part of the country will have quite a boom. A townsite is being laid out at Oak Glen, which has been quite a summer resort for a number of years.

The price of milk and cream has been materially advanced all over the country. Nobody any longer attributes the raise to the manipulation of trusts. It's a simple case of too many people and too few cows.—S. F. Chronicle.

Herman Horneman, in Dairy Produce, remarks: "Patron, give the creameryman a square deal and be ashamed to catch yourself kicking. When your test goes down reason a little. If your neighbor is getting a higher test than you and you feel dissatisfied, why, bless your heart, turn that cream screw, or clean out the cream or skim milk outlet."

HORTICULTURE.

Fallbrook has had 19.35 inches of rain for the season.

Nine thousand acres of beets will be planted about Chino.

San Fernando has shipped 35 cars of oranges this season.

Redlands has shipped 1539 cars of oranges to date and half a car of odd boxes.

Merriman & Tetley have planted two carloads of grape cuttings in the Imperial valley.

There have 13 cars of fruit gone East from Rialto this week, beside five cars for local consumption.

The theory of the rapid decline of Salton sea is being verified, it having fallen seven inches to date.

The output of citrus fruit from Ontario district is much greater than at first estimated by a good many cars.

Ontario citrus shipments for the last month were 200 cars, and at present prices the record will exceed these figures the present month.

The reduction of 10 cents per 100 pounds in the freight rate will mean about $50,000 to the orange growers of the Model Colony.—Upland News.

Ranchers on the Chino lands are setting out quite an acreage to English walnuts this season. This is an unusual occurence in San Bernardino county, as it has practically no walnut orchards.

The rabbit drive Sunday at Stalder, near Riverside, was a complete success and resulted in the death of nearly a thousand of the animals which are such a nuisance to the young orchards, doing a great amount of damage to the trees.

HOPS IN CALIFORNIA.

In some respects methods of hop culture are the same the world over, but owing to peculiar characteristics of soil and climate a system which would work well in England, on the countinent of Europe, or in New York state, would not succeed on the Pacific coast.

So severe has become the competition in hop culture, as in all other branches of agricultural inudustry, that the producer to be successful must be ever on the alert to apply the best and most modern methods.

The last few years have seen some of the best hop yards on the Pacific Coast sold out under mortgage on account of unrenumerative prices, unskillful production, and unbusinesslike methods. There is not a hop grower on this coast, unless it be one who has a large bank account which he can afford to reduce rapidly, who can stay in hop culture using the methods which were in vogue twenty-five or thirty years ago.

Professor Davenport of Illinois gives his opinion that dairy husbandry represents the most intensive form of agriculture practiced on this side of the water, and that we have not settled down to the development of the industry yet. The individual dairyman has his attention too exclusively fixed upon his personal affairs, and too little upon the industry he represents.

"Young man, make your name worth something. If you can sell a hat for $1 you can sell it for $2 if you stamp it with your name and make the public feel that your name stands for something."—Andrew Carnegie.

If the mare is to foal early, before grass time, give her a few boiled oats, and a liberal supply of bran with a little flaxseed occasionally. If she is getting plenty of grass, nothing of this kind will be needed.

Northern California

AGRICULTURE.

Lindsay has had 11.61 inches of rain.

For the fourth time Orosi is flooded this season.

Sheep shearing has commenced at the Kings river bridge and about 120,000 head will be clipped.

The stockholders of the Porterville creamery met on Saturday afternoon last and perfected the organization of the corporation.

The people of Tipton came to gether last night and formed a cooperative, or rather Rochdale Creamery Association.

It rained 4.06 inches during the week at Lockwood, making a total of 19.95 inches for the season's rainfall to date.

The directors of the State Agriculture Society at Sacramento decided to begin the state fair on the 9th day of next September.

There will be at least 1000 acres of land in the Lockwood valley that will not be seeded this year on account of the excess of rain.

The registered Holstein. Friesian Cow Western Duchess Bessie, was sold by Chas. D. Pierce to Wm. H. Crocker, San Francisco.

L. P. Denney has sold five cars of cattle off his ranch near Corcoran. Among the lot were two Angus steers less than 1 year old that weighed 910 pounds each.

Tulare lake is now 11 feet and 11 inches deep in its deepest place, or within four inches of where it was on August 12th last, when it was at its maximum depth last year.

H. J. Ostrander says the increase in sheep this year has been 100 per cent. The season is very favorable for lambs—the weather mild and the feed abundant.—Merced Sun.

The examination of soils by the United States Department of Agriculture bureau of soils, which was asked for by the Colusa Chamber of Commerce, has been started in Colusa county.

The rainfall in Redding for the twenty-four hours ending at 7 o'clock Thursday morning was 0.40 inches. This makes the season's precipitation 28.48 inches, against 22.37 at even date last season.

Hatfield, the rainmaker, has received the balance of his money from the Crows Landing farmers and has suspended operations for the present, as the required 12 inches of rain has been produced.—Madera Mercury.

Every clear day over one hundred acres of sugar beets are planted on the company farm of the Alta California Sugar Company near Chico. Already 1575 acres have been plowed and 500 acres have been seeded to beets.

Beet seeding around Hamilton is progressing rapidly now that the fine weather has set in. Fifty-seven ten-mule teams are at work plowing, followed by another army of men and teams harrowing and leveling. Behind these come the seeders.

It is estimated that about one hundred acres daily are being seeded to beets at Hamilton. At Woodland and Gridley, where the sugar company has a large acreage, the same active work is reported, and at Chico there are a number of farmers planting small acreages.

The following registered Holstein bulls changed hands last week:—De Gracfschop, The Leland Stanford, Jr., University to P. J. Van Loben Sels, Vorden; Gelderland, The Leland Stanford, Jr., University to P. J. Van Loben Sels, Vorden; Helena Burke Korndyke of Riverside, Chas. D. Pierce to J. L. Kinnear, Newman; Ideal De Lone, J. F. Rouch to O. F. Smith, Hanford; Maud Moole Prince of Riverside, Chas. D. Pierce to J. H. Harlan Co., Woodland; Paul Revere Konigen, Walter Mitchel to L. M. Howell, Visalia; Victor Hugo of La Siesta, J. H. Frazell to Est. J. C. Zuck, Gilroy.

HORTICULTURE.

Bonnie Brae has received 13 inches of rain to date.

Rain for the season as Exeter registers just a foot.

Dinuba's rainfall to Marsh 12, was 12.67, against 9.10 lest year.

The prospects about Yuba City are good for a fine crop of stone fruits.

The almond crop of Sutter county will be much lessened by rain and frost.

San Benito has had 16.77 inches of rain to date, 10.93 was last year's record.

A scheme is on foot to drain 6000 acres of Bear river bottom lands near Wheatland.

Yuba City's rainfall for the season is 21.34 inches, against 14.28 to a corresponding date last season.

The best equipped packing house in the San Joaquin valley is now in course of construction in Dinuba.

Corning has 16.35 inches of rain for the season, against 14.65 inches for the corresponding date last year.

The rainfall for the season up to Saturday noon for Soledad has been 11.38 inches, same date last year, 6.21.

Pruning about Olinda is well under way and with a few days of good weather most of the growers will finish the work.

According to the "Pajaronian," Watsonville's total rainfall to date is 31.15 inches, while the Boulder Creek Echo's report is 31.95.

Z. T. Stroup, William Pinnegar, J. J. Silva and Lamiman brothers, near Olinda, are making quite an extensive planting of peach trees on their places.

The rainfall measured on the government gauge at Salinas seventeen-hundredths of an inch for last storm, making 19.93 inches for the season.

The first car of California grapefruit to arrive in Boston in this season and probably the first to be shipped from the coast left Lemon Cove, California, on February 3.

James Hopkins shipped 50,000 Melindat strawberry plants to Sargen Station for the P. W. Morse Co. This company will add fifty acres to their strawberry area at Sargent's this spring.

Most varieties of peaches are now in bloom and pear trees are just breaking the fruit buds and from present indications there will be a bountiful crop of all kinds of fruit in the Olinda section.

J. E. Viney, from Lemoore, reports considerable development work on the Empire ranch. There is a large company of Japs employed there in planting a tract of 700 acres to vines for the Italian-Swiss colony.

Messrs. Merrill & Vosburg have purchased from John H. Williams one of the largest orange orchards in the foothills near Porterville. There are 150 acres in the grove and the price paid was $750 an acre.

R. C. Merryman, owner of the famous Donnie Brae orange orchards, has begun the laborious task of transplanting some seventy acres of five-year-old orange trees to a higher and frostless belt, says the Exeter Sun.

G. D. Barber, of Olinda, will set out 15,000 grape cuttings of the Emperor variety. This variety of grapes has become very popular on account of the heavy yield and profitable prices received in the Eastern market for the fruit.

A manufacturer of apple wrappers in Seattle has recently taken orders for ten cars of the small squares which are used to wrap apples before packing them for shipment. This indicates that the largest crop ever gathered is expected this fall.

The man who farms by irrigation bets on a sure thing. And it is not gambling, either.

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IF YOU WANT EGGS
YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

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The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and breed. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for greatest batch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be isued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. FILCHER, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

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Excelsior Mills

Excelsior Chick Food

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The Best Food on the Market

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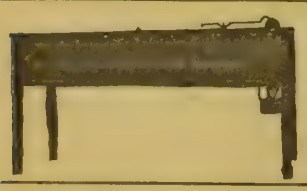

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When writing advertisers, mention Cultivator.

Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

PRESERVING EGGS.

THE price of eggs has dropped to the great delight of housekeepers and the hens are doing their best, a sure sign that eggs are very plentiful and we may have two apiece for breakfast.

From away off in beautiful Shasta county comes the following letter and as I feel sure a reply to it will interest many I will take it as the subject of our chat today. I am more willing to do so as I have had most excellent success for the last four years, every year, preserving my surplus eggs for fall and winter use.

Pertinent Questions.

"I take the liberty of addressing you as I am a subscriber to the Cultivator and of course very much interested in your talks on poultry matters, as I am just trying to make a start in the business."

"The main point now is can we preserve eggs satisfactorily so as to obtain a little better pay for our work?"

"I have heard that you have had good success with silicate of soda or water-glass."

"Did you use a dry powder or the solution? And would you have any objection to letting us know of whom you purchased?"

"I had a small sample sent by the Acme Egg Preserving Company, of Chicago, in powder form but I have been unable to hear from them since last September. A reply in the Cultivator will be appreciated."

Last year I also received a letter in Los Angeles county on the same subject. It read:

"I bought from our local druggist a bottle, less than a pint of silicate of soda. It was a colorless liquid, very thick, and had a musty smell. Believing it to be old and fearing the eggs would absorb the musty flavor I feared to use it, I therefore went to a city drug store and bought some. It was no thicker than water and a dark color, almost like coffee but has no musty smell. These were both called "silicate of soda" but are so different that I do not know which is the right one to use."

Water-Glass is Variable.

This touches at once the most difficult point probably in the use of water-glass for preserving eggs, namely, its tendency to vary in quality. As a matter of fact there are two or three kinds of water-glass, and in addition to the fact that the buyer does not always have a distinct idea as to what he wants, the local druggist may not know all about it, or he may not know which kind is best for preservative purposes. The main use of these preparations for years has been the rendering of fabrics non-inflammable.

The Royal Theater of Munich, was rendered fire-proof by its use as a varnish in the frescoe work, woodwork, scenery and curtains. It is also used for hardening stone and protecting it from the action of the weather. It was thus used many years ago, to arrest the decay of the stones in the British Houses of Parliament.

The use of this medium for egg preservation is comparatively new, especially in this country, and it is not to be wondered at that dealers do not always supply just what is wanted.

What Water-Glass is.

If we used the term soluble glass or "dissolved glass" in reference to either water-glass or silicate of soda, it might better describe just what we want, although one of the other names might be preferable when ordering of the druggist. For this term expresses exactly what the material is.

When we buy it by the pint or quart we get dissolved glass. When we buy it dry, we get a soluble glass powder, sometimes like powdered stone, sometimes white and glassy as to its particles.

The powdered forms are supposed to dissolve in boiling water, but they do not dissolve readily, and must often be kept boiling for some hours.

How it is Made.

Water-glass is made by melting together pure quartz and a caustic alkali, soda or potash, and sometimes a little charcoal. It will be seen that there is nothing that should get musty.

I think the two kinds which appear in the market are known as German and American. The German formula turns out a black glass, which dissolves in about six times its weight of boiling water.

Dr. Santee said at one of the New York Poultry Institutes, that the German kind was usually used in proportion of one part to ten of water. The American form one part to eight of water. This is when purchased already dissolved.

As the German formula produces a black glass, it is easy to see where our inquirer's trouble arose. One druggist had sold the syrupy, jelly-like American form, and the other, sold the dark-colored German product. At least this may explain the difference in the two lots.

Egg-preserving Methods.

Of twenty methods of preserving eggs tested in Germany, the three which proved the most effective were coating the eggs with vaseline, preserving them in lime water, and preserving them in water-glass.

The conclusion was reached that the last was preferable, because varnishing the eggs with vaseline takes considerable time and treating them with the lime water may give them a disagreeable taste.

These drawbacks are not to be found with eggs preserved in water-glass, which unquestionably is the best preservative yet to discovered.

Personal Experience.

I can speak from my own experience, for I have packed eggs in it for four years and shall do so again this year. We are fond of fresh eggs and use a great many, and I find it most convenient to have a jar or crock full of nice eggs always at hand.

We're Checkerboard twins—hardy, healthy and happy. See our ad, page 315.

I have kept them myself for eight months and have no doubt but that I could have preserved them still longer had we not eaten them, for I found them to all appearances as fresh as if not over a week old. It costs about 1½ cents per dozen to preserve them.

Various Experiments.

Several of our Experiment Stations have made some rather exhaustive experiments with this dissolved glass in preserving eggs. The reports are, without exception, in favor of it.

No other preservative is reported as being equal to this one. The stuff is invariably described as a thick or jelly-like liquid, and the proportions recommended are one pint of the silicate of soda to nine pints of water, although the Rhode Island Station reports experiments in which as low as two per cent. of water-glass was used with favorable results.

This was done to find out how little could be used, but this small proportion was not recommended. Futher trials may show that less than nine to one may be reliable.

Directions for Use.

The directions for use are: Use pure water which has been thoroughly boiled and cooled. To each ten quarts of this water add one quart of water-glass. Pack the eggs in the jar and pour the solution over them.

The solution may be prepared, placed in the jar and fresh eggs added from time to time until the jar is filled, but care must be taken to keep fully two inches of water-glass solution to cover the eggs.

Keep the eggs in a cool place and the jar covered to prevent evaporation. A cool cellar is a good place in which to keep the eggs.

If the eggs be kept in too warm a place the silicate will be deposited and the eggs will not be properly protected. Do not wash the eggs before packing, for by so doing you will injure their keeping qualities.

Probably by dissolving the mucilaginous coating on the outside of the shell. For packing use only perfectly fresh eggs, for eggs that have already become stale cannot be preserved by this or any other method, and one stale egg may spoil the whole batch.

Some Adverse Reports.

Prof. Ladd of the North Dakota Agricultural Station spoke of receiving a few complaints that barrels were not proving satisfactory. The water-glass appearing to dissolve some product which deposited on the eggs.

He thinks this might be attributed to the presence of glue, which had been used as sizing for the barrels. In such instances, charring the barrel inside with thorough washing thereafter, is recommended. Altogether the preference seems to be for glass or stoneware vessels.

Prof. Ladd's statement as to the satisfactory results of the water-glass method is very strong. He says:

"This method has been tested in a commercial way, in nearly every state and part of our country, and we have not had to exceed eight adverse reports."

Get Good Material.

One of the stations affirms that the failures reported are probably due to receiving water-glass of poor quality.

It is also stated that these, like all preserved eggs, contain a little gas, when boiled they will be likely to burst unless previously pricked through the shell at the large end.

As the entire processes of preservation are an effort to fence out germs, the recommendation not to wash off the mucilaginous coating which nature puts on the eggs, and also to use only boiled water, appears very logical.

When we know just what we are aiming at, we are less likely to omit the little precautions which otherwise might seem like the whims of some fussy person. Too many people skip the essentials when trying to follow a formula.

I have no objection to telling where I purchase mine, I get it either at the "Sun Drug Store" price 85 cents for a single gallon or at the rate of 65 cents per gallon for five gallons and 60 cents gallon in ten gallons lots, or I get it at the Owl Drug Store. The price here is 40 cents a quart, $1.25 a gallon or $1.10 in five gallons lots and $1.00 a gallon in ten gallons. The Owl Drug Store claims that the reason their's is dearest is that it is pure. Both stores sell the American make. They do not keep the dry powder.

Ross & Tate, Altadena, California

Breeders and Importers of

Buff, Black, and White Orpingtons

Have for sale Trios, Cockerels and Pullets. Eggs for hatching, settings or hundreds. Write or call.

Two Blocks North, One Block East Altadena Post Office

C. J. Ferris

BREEDER OF THE FAMOUS

Buff Plymouth Rocks

Winners of Five Prizes at the late Los Angeles show, the largest show ever held on the coast A few choice cockerels for sale. Eggs, $2 and $3 per 13. Write your wants.

San Gabriel, California

East San Gabriel Egg Ranch

S. C. WHITE LEGHORNS
BARRED P. ROCKS

Eggs for hatching $1 per 13 $5 per 100 We breed from two year old hens, and the best ones of the flock only. No stock for sale. Ranch two blocks south San Gabriel car line.

Swanson & Johnson. *San Gabriel, Cal.*

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Beef Scraps | **Raw Bone**

GUARANTEED ANALYSIS: Protein 65% Fat 8%

Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in these Beef Scraps.

GUARANTEED ANALYSIS: Protein 25% Phosphates 45%

Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods

WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

The Largest Poultry Supplies House in the United States

Peerless Chick Feed

Is the Cleanest and Purest Chick Food possible to produce and insures

Health and Rapid Growth in Baby Chicks

GRANULATED MILK—the Pure Protein Food

315 S. Main **HENRY ALBERS CO.** Los Angeles

Black Minorcas Exclusively

Winnings at the great Los Angeles Show, January 1 to 5, 1907:

Cocks—1st and 3rd. *Cockerels*—1st, 2nd and 3rd
Hens—1st, 2nd, 3rd, 4th and 5th.
Pullets—1st, 2nd, 3rd, 4th and 5th. *Pens*—1st and 2nd.
Cup for Best Minorca Male, also Cup for Best Display.

Plenty of Fertile Eggs For Sale.
Send for our new illustrated catalogue.

Perham & Wheeler

R. F. D. No. 123 Lordsburg, Cal.

Mission View Poultry Ranch

White Wyandottes
That Are Trap-Nested

Prize Winning, Large Egg Laying Strain. Won Nineteen Prizes in 1906!

Mammoth Bronze Turkeys Lakenvelders
Silver Laced Wyandottes

Mrs. C. D. Hubbard Box 282 San Fernando, Ca

CHECKERBOARD CHICKENS

BRING HIGHEST MARKET PRICES.

Why are you raising Chickens? For your Health, or to Make Money?

If you want to raise the best chickens—chickens that will produce the most eggs, and chickens which when sold will bring the highest market price—you want to pay more attention to what you **feed** your poultry.

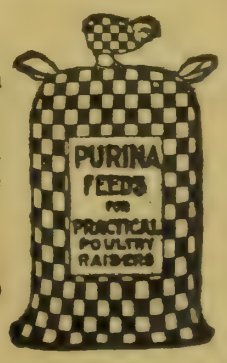
Any old kind of poultry feed will produce any old kind of chickens, but it takes the **best poultry feed** to produce the **best chickens**—chickens that make you a profit. Mixing a few things together doesn't make a Poultry Feed. It is a scientific proposition and requires a thoroughly equipped mill to grind and clean and screen and blend together grains and seeds in just the right proportion for the baby chicks or the laying hens.

ASK FOR THE CHECKERBOARD BAG.

All Purina Poultry Feeds are put up in Checkerboard Bags, to insure that you get the original feeds. **Every bag is absolutely guaranteed.**

PURINA POULTRY FEEDS are made from sound, sweet grains and seeds thoroughly cleaned and sifted. No smutty or burnt wheat. NO GRIT or SHELL. Our reputation is back of every Checkerboard Bag. A feed for every purpose. Purina Baby Chick Feed to develop the little fellows; Purina Scratch Feed for every day in the year; Purina Egg Food to make hens lay, and a green feed for the year 'round.

WRITE FOR SPECIAL OFFER, CIRCULARS, ETC., DIRECT TO SOLE PACIFIC COAST MANUFACTURERS



ACME MILLS CO. PORTLAND OREGON

3 MILLS—CAPACITY 12 CARLOADS DAILY

THE BLACK MINORCA.

The Black Minorca, (of which there are two varieites, the Single and Rose Comb,) is among our best fowls, not only for the fancier, but the utility man. No doubt all Minorcas are decendants from the Single Comb Black, as their history goes farther back than either of the other varieties. It is said that the Whites are from the Black, and their admirers claim that no foreign blood was used in their make-up; yet we have heard this disputed by men who ought to know. However, this part of the subject we will not discuss.

History.

As to the real history of the Single Comb Black, very little is known, although they have been an established breed for over sixty years, and there is little doubt, but that they were imported from the Island of Minorca, one of the largest of the Beloric group in the Mediterranean Sea. Just when the first importation was made we have no definite authority, but we do know where they got their name, and why they are placed in the Mediterranean class.

Mr. Lewis Wright says, in the Illustrated Book of Poultry: "There is more evidence than usual for the source of this breed being truly represented by its name. Mr. Lewrothy told us that Mr. Willis, a friend of his, had seen them in Minorca, and the Rev. Thomas Cox, of Castle Cary, informs us on direct authority of Sir Thomas Ackland that his father, the former Baronet, undoubtedly brought some from that island direct to England in 1834 and 1835, and kept them for years at Holnicote. It is doubtful if the fowl was not already known in the west of England, but there is no doubt that one strain did diverge from this ascertained importation, and the breed was for years known and prized in Devon, Cornwall and Somerset, before known elsewhere."

Just when the first importation was made to this country, we cannot say, but we know that they have been bred for a long time,—so long that the type has been fixed until they will reproduce themselves to a marked degree. When they were first bred in England, they were not considered a fancy fowl. There was no separate class for them, and they were ignored as an exhibition fowl, and were bred solely for their practical purposes, which now only adds to their value.

It is claimed that they lay larger eggs and more of them than any other fowl known. We give them credit for laying the largest egg of any bred; yet as to their laying more, we cannot say, as we never saw them in a test with other egg-producing fowls, such as the Leghorn, Andalusians, Rocks, Wyandottes, Reds, etc.

Shape.

A typical Black Minorca is distinguished for its length, firmness of build, and haughtiness of carriage. Its movements are graceful, and it has a commanding appearance. Those not acquainted with the breed are often deceived in their weight, as their feathers are very close, which makes them appear much smaller than they really are. The Standard weights for the Minorcas are: cock, nine pounds; cockerel, seven and one-half pounds; hen, seven and one-half pounds; pullet, six and one-half pounds.

A Black Minorca Breeding Pen

Perham & Wheeler, Lordsburg, Cal.

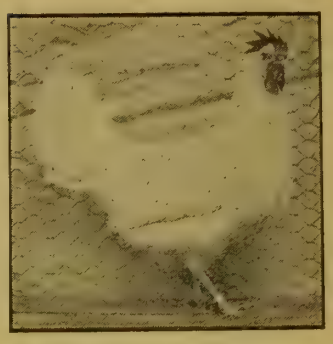
Something like two years ago the Standard weights of the Minorca were raised one pound, or to the present weights, by the American Poultry Association. This is considered by many breeders as being too high, and being detrimental to the breed, as in breeding for the extra weight many of the true Minorca characteristics have been lost, as it gives the breed a stilty, clumsy appearance, and that in breeding and feeding for the extra weight the egg production has been retarded. We know that there is a movement on foot now to get the Standard lowered to their original weight.

First Black Minorca Cockerel

Los Angeles, 1905.
Bred and Exhibited by Perham & Wheeler, Lordsburg, Cal.

The single comb of the cock bird should be very large, smooth and straight, and set firm on the head,

Of course I feel good for I'm a Checkerboard Chick. See my ad on page 315.



Maud S, 1st Prize Hen, San Jose
Bred and Raised on My Ranch

Baldwin's White Leghorns

Baldwin's Leghorns are all right in blood lines and for heavy laying right straight through the year they are unexcelled. I breed nothing but White Leghorns and make them a study, aiming at quality and market value combined.

My yards are modern in every respect and I invite inspection. Think of us when you think of White Leghorns.

My best pens are made up of stock from the first prize winners at the great show at Madison Square Garden, New York, 1905 and '06.

All stock sold on a guarantee to be as represented.

Eggs, $1.50, $2.00, $3.00 and $5.00 per setting (15). Incubator lots, $6.00 and $10.00 per 100. My $6.00 eggs are from selected yards. My $10.00 eggs are from especially selected matings of my finest birds.

Send for catalogue giving full description and prices of my matings and show records.

Frank E. Baldwin *The White Leghorn Specialist*

Phone Suburban 82 46 Washington Ave., San Jose, Cal.

Chas. E. Smith Breeder of *Arrowhead Strain* of

Barred Plymouth Rocks

Won at Los Angeles Show, the largest ever held on the Coast, 225 Barred Rocks in class, as follows: 1st, 2nd and 5th Pens; 1st, 3rd, 4th and 5th Hens; 1st, 2nd 3rd and 4th Pullets; 2nd Cockerel. Barred Rock Club Cup for Best Display; Association Cup for Best Display, and Three Incubators, one for Best Pen in Show, all breeds competing.

Choice Stock for sale from same mating that I bred my prize winners from. Prices reasonable. Eggs, ***$3*** and ***$5 per 15.***

Chas. E. Smith, Gardena, Cal.

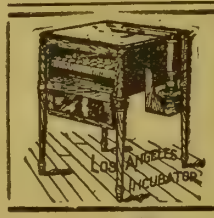
Take San Pedro electric cars via Gardena to Smith's Crossing.

THE FEATHERLY FARM ORPINGTONS

BUFF BLACK WHITE

Our yards are now mated for the season; containing winners of nearly 100 Prizes, Specials and Cups at California's leading shows. Our handsome Mating List and Catalog describes them all. Send for it today; it is free. Our birds are bred for utility and heavy egg production as well as beauty. All egg orders booked in rotation. Satisfaction guaranteed.

P. L. Harley, Box C, Redlands, Cal.



INCUBATORS

1907 Los Angeles

"Model" Made by Chas. A. Cyphers — Best Hot Water Incubator — **"Peerless"** Made by Henry Albers Co.

Call and See Them or Send for Free Catalogue

315 S. Main **Henry Albers Co.** Los Angeles

The White Faced Black Spanish

Are famous as layers of large white eggs at all seasons of the year. We won all prizes at the Breeders Great Show, 1907. **Choice Cockerels For Sale, $5. Eggs, $1.50 per 13, $4.50 per 50, $8 per 100.** Special matings, $3 per 13. Fertility guaranteed.

Mrs. W. H. O'Connor Lock Box 112, Dolgeville, Cal.

Bemis Plymouth Rocks

Barred and White

22 Regular Prices. ***4*** out of the 5 Specials given by the American White Plymouth Rock Club. ***Silver Cup*** for the ***best collection*** in American Class. ***Silver Cup*** for ***best display*** in American Class. ***Hines Silver Cup*** for 10 Best White Plymouth Rocks in Show. I am able to ***furnish*** the ***best*** birds and eggs at moderate prices. I cannot furnish large lots for incubators.

Mrs. Florence E. Bemis, 1757 19th Ave., Oakland, Cal.

Black Tailed Japanese Bantams

I have purchased of Le Roy Burnell his entire flock of these miniature beauties, including all the prize winners at the late Los Angeles Poultry Show. These, added to my original stock, give the following prize winners: 1st and 2nd Cocks; 1st and 2nd Cockerels; 1st, 2nd, 3rd and 4th Hens; 1st, 2nd, 3rd and 4th Pullets; and 1st and 2nd Pens, which makes the largest and best flock on the Coast. ***Eggs, $2.00, $3.00 and $5.00 per 15. A few trios for sale.***

Frank J. Ironmonger, 315 So. Main St., Los Angeles, Cal.

The Columbian Wyandotte Specialist

NOTICE TO MY BARRED ROCK PATRONS:

On January 10th, 1907, I assigned over to H. T. McCULLOUGH, of Monrovia,, Cal., all my right, title and interest in the Arrowhead Strain of Barred Plymouth Rocks. Hence, the McCULLOUGH POULTRY FARM is the only one that can supply eggs and stock direct from the original birds and from matings made, personally, by me, to produce high-brade breeding and exhibition specimens. Thanking my many fancier friends, patrons and the public for their trade, and bespeaking for my successors a continuance of their valued favors. I remain, Fraternally yours, S. M. BUTLER.

Starbuck's Barred Plymouth Rocks

We Trap-Nest Our Hens. Bird Laying Qualities are inherited. Why set from poor layers? We use pedigreed cockerels whose mothers have for over six generations laid over 200 eggs per year. Eggs from old hens, $1.50 and $2.00 per setting of fifteen; from pullets $1.00 per setting of 15. No sales or visitors Sundays.

Wm. Starbuck - Fullerton, Cal.

Beef, Blood and Bone Will Make Your Hens Lay

This is not a medicine but a high grade nitrogenous food. Write for free booklet, "How to make Hens Lay." Our Poultry Foods are sold by all local dealers and manufactured solely by

The Pacific Guano and Fertilizer Co.

Also Pioneer Manufacturers of ***High Grade Fertilizers.*** Write for our free booklet, "Farmer's Friend." Valuable to all farmers and ranchers.

Indiana and Yolo Sts., San Francisco, Cal.

Chicks Just Hatched

We ship them everywhere. Pure Bred White Leghorn Chicks from the Best Egg Producers in the United States

CALIFORNIA INCUBATOR CO., MAXWELL, MAY 27, 1906.

Gentlemen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come so far and being so long on the way without the loss of a single one, but it is an undisputed fact that such was the case We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. CAMPBELL.

CALIFORNIA INCUBATOR CO., 907 Washington St., Petaluma, Cal.

New Sure Hatch Book

Already the talk of the poultry world, 102 pages filled to the brim with valuable information drawn from actual experience.

"Sure Hatch" Incubators

Sold under five years' guarantee, freight prepaid, for the low Sure-Hatch prices. Must do the work for you or we take it back at our expense. 110,000 in use, giving satisfaction. Write today for the new free Sure-Hatch Book No. 25. Read it before you buy an incubator at any price.

Anna P. Williams, General Agent, 809 South Main St., Los Angeles

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200-250 Egg Fowls | **WHITE WYANDOTTES** | Eggs Ready Now

10 Highest Scoring Birds, Seattle, 1907
Winning over the cream of the North Coast

Four Firsts and all the Big Specials at San Francisco
Pronounced by the National Expert Judges equal to any in the United States

1907 Catalogue and Mating List Free.
Eggs and Stock. Clears Replaced. Expressage Paid.

CAPITOL AVENUE POULTRY FARM
I. L. R. MANTZ ***Rural 21, Box 98k*** **SAN JOSE, CAL.**

WHITE MINORCAS

Won at Alameda Poultry Association Show, 1907: 1st Cock, 1st Hen, 1st Pullet

EGGS FOR SALE—$2.50 per Setting of 15; Two Settings, $4.50; Incubator Lots $10 per 100.

A Few Cockerels For Sale. Prices on application to

Coulson Poultry and Stock Food Company
Petaluma, California

Germain Seed Co., Los Angeles, Distributing Agents for Southern California

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The Old Trusty Incubator

Is On Sale by the Following Firms:

Sent on Free Trial to Anyone Anywhere.

L. W. Nickell, 725 K St., Sacramento, Cal.
Tulare Rochdale Co., Tulare, Cal.
J. H. Cox Seed Co., San Bernardino, Cal.
H. K. Surall & Sons, Riverside, Cal.
H. H. Harris, Elsinore, Cal.
R. Plumley, Byron, Cal.
C. E. Evans, Whittier, Cal.
C. E. Hoover, Norwalk, Cal.
Fresno Rochdale Co., Fresno, Cal.
San Diego Poultry Assn. Store, San Diego, Cal.

You can see it working; see the wonderful results. Our trial offer will be made by any of the above branches.

Get an "Old Trusty" Incubator if you want the best machine on the market.

McClanahan Incubator Co.
709 So. Main St., Los Angeles, Cal.

For Sale By

Eggs — El Oro Poultry Farm

Hens
Pullets
Cocks and
Cockerels

H. H. Holland, Prop.

Fresno, California

White and Brown Leghorns, Barred Rocks, Black Minorcas, Blue Andalusian and Bronze Turkey Eggs, $1.00 to $3.00 per setting of 15 eggs.

Incubator lots from $4.00 per hundred upward.

Stock for sale. Prices named on application. Order now and get off your early hatches.

S. C. White Leghorns
Eggs, $1.00 and $1.25 per setting of 15; $4 and $5 per 100. High fertility guaranteed.
C. O. Hockabout **Watsonville, Cal.**

MY EXHIBIT OF
WHITE, BUFF AND PARTRIDGE **Wyandottes**
Won 26 Ribbons and Special Prizes at the Poultry Breeders' Show, 1907
R. D. Box D87 **L. E. BERKEY,** Fullerton, Cal.

evenly separated, having six regular and distinct points, the middle point the longest. It should be thick at the base, so as to keep it in upright position. Comb of female, large and drooping to one side of head, forming loop over beak, deeply and evenly separated, having six regular and distinct points.

The rose comb of the cock should be square in front, firm on the head, tapering evenly from front to rear, ending with a well-defined spike. Top rather flat, covered with rounded points. The comb of the female, should be practically the same as the male, only smaller. The comb, face and wattles should be bright red.

Carlotta

Black Minorca Pullet, who has the best show record of any Minorca female on the coast. Owned by Perham & Wheeler, Lordsburg, Cal.

The ear lobes should be almond-shaped, pure white, and smooth. Plumage should be rich, glossy greenish black throughout, free from any foreign color, and should be free from purple barring.

To those who want a good all-purpose fowl, we can recommend the Black Minorca as a very hardy breed, good layers and foragers.

For the climate of the Pacific Coast we consider the Minorca one of our best breeds, as here we have no frosts to nip the large comb and wattles. Their comb we believe is a serious handicap in the cold climate.—Frank H. Thomas.

POULTRY POINTERS.

Scald out the drinking vessels every few days and keep them as clean as possible.

Keep the poultry house dry, for damp poultry houses are breeding houses for disease.

The best condition powders for the poultry consists of clean quarters, good feed and pure water.

A variety of food will help to keep the hens healthy and will also be good for the egg production.

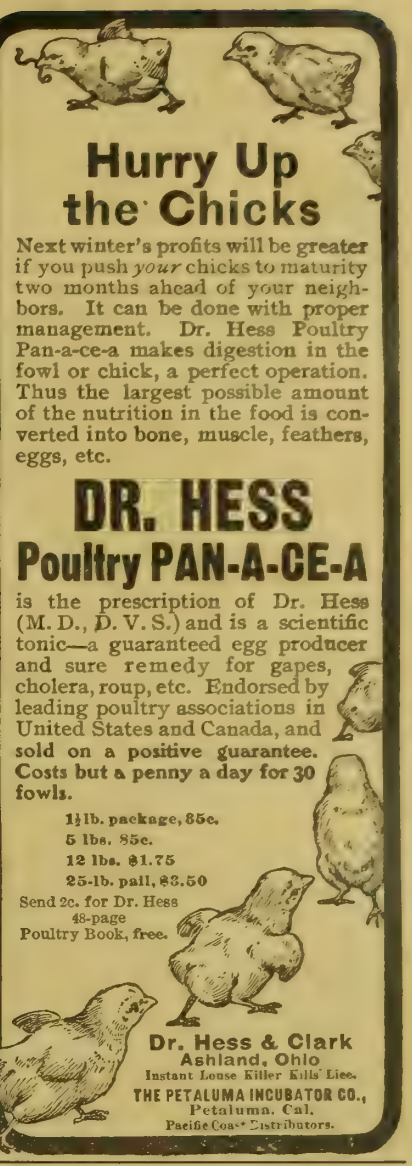
The hens should always have a dust bath handy, winter and summer. This will help keep the fowls free from lice.

Forcing egg production is a dangerous practice if the flock is a good one. Keep them in good condition and they will do their part.

The three great factors in winter production of eggs are cut-bone or meat, green food in some shape, clover or roots, and exercise.

Change the food for a day or two if the fowls have bowel disease. Half of the troubles of this kind can be traced to a lack of sharp, hard grit.

Did you say Checkerboard? That's me. See my ad, page 315.


Hurry Up the Chicks
Next winter's profits will be greater if you push your chicks to maturity two months ahead of your neighbors. It can be done with proper management. Dr. Hess Poultry Pan-a-ce-a makes digestion in the fowl or chick, a perfect operation. Thus the largest possible amount of the nutrition in the food is converted into bone, muscle, feathers, eggs, etc.
DR. HESS
Poultry PAN-A-CE-A
is the prescription of Dr. Hess (M. D., D. V. S.) and is a scientific tonic—a guaranteed egg producer and sure remedy for gapes, cholera, roup, etc. Endorsed by leading poultry associations in United States and Canada, and sold on a positive guarantee. Costs but a penny a day for 30 fowls.
1½lb. package, 85c.
5 lbs. 85c.
12 lbs. $1.75
25-lb. pail, $3.50
Send 2c. for Dr. Hess 48-page Poultry Book, free.
Dr. Hess & Clark
Ashland, Ohio
Instant Louse Killer Kills Lice.
THE PETALUMA INCUBATOR CO.,
Petaluma, Cal.
Pacific Coast Distributors.

Spargur's Trap-Nested White Leghorns

Eggs from 200-Egg Hens,
$1.50 per 15, $6.00 per 100
From Second Best Pens,
$1.00 per 15, $5.00 per 100
Indian Runner Duck Eggs
$1.00 per 13, $5.00 per 100
Blue Andalusian Eggs, $2.00 per 15, prize winning birds

H. G. Spargur - Soquel, Cal.

Chicks Hatched

From Eggs Sent Us

From Brown Eggs, 4c
From White Eggs, 3½c

Minimum Charge, $2.50 per Hundred Eggs. No direct charge for infertiles.

Bihn-Schofield Method

51,000 Hatched Last Year, Shipped to Five States
Combined Egg Capacity, 45,000

M. A. Schofield Gardena, California

White Minorca Cocks and Cockerels and White Wyandotte Cockerels For Sale.

Eggs of Both Varieties from High Scorers and Great Layers.

$1.50 per Setting, $8.00 per Hundred

S. W. Morgan, Sunnyside, San Diego Co., Cal.

O. K. Trap Nests Shows the hen that lays the eggs and keeps her from eating or breaking it after it is laid.

O. K. Feeder Just the thing for your Scratch Shed. Send for circular explaining its workings.

C. B. Williams
Box B **Ontario, Cal**

Willard Poultry Farm
Hynes, Cal.

WHITE WYANDOTTES WHITE MINORCAS
INDIAN RUNNER DUCKS

Winners at late Los Angeles Shows. White Minorca and White Wyandotte eggs, 1st pen, $3; 2nd pen, $2 per 15. Duck eggs, $2 per 13.

Mrs. Hungerford, Mgr., Hynes, Cal.

White Rocks and Black Minorcas

They are beautiful birds; Rocks as white as snow, Minorcas black as a crow. Cocks from W. M. Humphrey's and Harry E. Rose's yards. Eggs for sale. Best pen, $1.50 per setting of 15, or $7.00 per hundred. Second best, $1.00 per setting of 15, or $5.00 per hundred.

Chas. S. Hunt, El Monte, Cal.

LINERS

Liner Advertising

Advertisements in Liner Column 1¼ cents per word. Eight words to a line. No advertisement taken for less than 25 cents.

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INDIAN RUNNER DUCKS—A WORLD beater for producing Eggs. Pure strain. $1.00 for 12; $5.00 for 100. Black Langshans. Prize Pen. $2.00 for 13. F. M. BENDER, Corona, California.

FOR SALE—INDIAN RUNNER DUCK eggs from choice stock, $1.00 per setting of 13; incubator lots at short notice at $5.00 per 100. F. J. QUANT, Madera, California.

EGGS FOR HATCHING.

EGGS FOR HATCHING—S. C. RHODE ISland Reds and heavyweight Black Minorcas, $1.50 per 13. MRS. L. M. RUCKER, R. F. D. 3, Chino, Butte Co., Cal.

GOLDEN LACED WYANDOTTES. Blue Bibbon winners wherever shown.— At Oakland 1907—won four, first —three, second and two third premiums.—Eggs from prize-winners $1.50 and $2.00 per 15. Fifty choice birds $1.00 to $2.00. Eggs proven infertile will be replaced if returned to me at buyer's expense. J. P. ENGLISH, Arroyo Grande, Cal.

ORPINGTONS AND REDS; PEKIN DUCKS—13 prizes on 16 entries, also silver cup, at "Breeder's Show" 1907. Eggs now ready, can't help but hatch winners, we breed them that way, fifteen years' experience counts. Our stock are great layers, rapid growers, top market quality, we guarantee satisfaction. GOODACRE BROS., Box 45, Compton Cal.

McKINLEY POULTRY FARM—BREEDERS of buff and white Wyandottes. Member American Buff Wyandotte Club. Golden Seabright and Pyle Game Bantams. Eggs $3.00 and $2.00 per 13. Take San Pedro Interurban car to McKinley, first house north. BOX 11, R. F. D., Gardena, Cal.

BLUE ANDALUSIANS—I did not exhibit this year but have better stock than ever. Eggs for hatching, $2.50 per 14. Incubator lots $7.50 and $10.00 per 100. No fear of inbreeding as we have three strains. MRS. T. R. GRIFFITH, 3111 Walton Ave., Los Angeles.

WHITE LEGHORN AND WHITE WYANdotte eggs for hatching, from extra choice, trap-nested, bred-for-eggs stock. Leghorn eggs $5.00 per 100; White Wyandotte eggs $1.00 and $1.50 per setting. $6.00 per 100. F. T. McLAUGHLIN, Gardena, Cal.

BLUE RIDGE POULTRY YARDS, W. H. Brown, Prop., 128 Ave. 32, Los Angeles, Cal. Breeder of Blue Andalusians. Won more first prizes than all our competitors combined. All specials went to our strain. Eggs $1.50 and $2.00.

MY WINNINGS AT THE LATE BREEDERS' Show on Rose Comb Black Minorcas were three prizes from four entries. Eggs two dollars per fifteen. Correspondence solicited. M. E. BROWN, Box one hundred, R. R. No. one, Los Angeles, Cal.

HAVE PURCHASED FROM W. A. STEWart the pen of Black Orpingtons that won 1st at Dairy Show, London last year, 1st at Breeders' Show, Los Angeles 1907. Will sell a few settings. ROSS & TATE, Altadena, Cal.

S. C. WHITE LEGHORN EGGS FROM THE bred-to-lay Blanchard strain. Large birds. $1.00 for 15; $6.00 per 100; Free city delivery. C. M. GIBBS, R. F. D. No. 4, Los Angeles, Cal. Phone W. 591.

FOR SALE—PURE BRED STOCK, S. C. White Leghorn Eggs. Large eggs, great layers, eggs for hatching only. $1.50 per 15; $6.00 per hundred. RICHARD POWERS, Anaheim, Cal.

FOR SALE—EGGS FOR HATCHING, FROM Buff Leghorns and Barred Plymouth Rock fowls, good color, fine layers. Eggs $1.00 to $1.50 per 15. WM. C. PARKER, No. 111 Pacific Ave., Santa Cruz, Cal.

35c PER DOZEN; S. C. WHITE LEGHORN eggs for hatching, fine stock, large eggs, 95 per cent. fertile. Carefully packed. MATT MARTIN, R.F.D. G street, Ontario, Cal.

FOR SALE—EGGS FROM TWO PENS OF extra fine White Plymouth Rocks, $2 per 13. FRANK H. THOMAS, 1820 Hobart Blvd., Los Angeles, Cal.

FARM LAND.

$1250—10 1-3 ACRES LEVEL LAND, 3 ROOM house, barn, well, family orchard; an ideal chicken ranch; price $1250. 15 miles from Petaluma. 5 miles from Santa Rosa WM. MAGER, SANTA PAULA, CAL.

FOR SALE—BLACK VEGETABLE SOIL 12 to 18 inches deep yielding greatest average crops raised in North America. Only $15 to $25 per acre. One-fourth down, balance 5 years at 6 per cent. Address, W. R. GILSON, 121 E. 4th St., Los Angeles, Cal.

HORSES.

IMPORTED CLYDESDALE AND HACKNEY Stallions. I sell better stallions for less money than any other man in the State. Can sell you a good stallion for $1000. WM. McKIE, 407 Alliso street, Los Angeles, Cal.

LIVE STOCK.

GUERNSEY BULL FOR SALE—A REMARKably fine thoroughbred Guernsey bull will be sold for want of use, cheap. R. S. COX, San Marcos, San Diego Co., Cal. R. F. D. No. 1.

POULTRY FOODS.

WEST COAST POULTRY FOODS AND REMedies are the best made and, quality considered, the cheapest. If your dealer doesn't sell them, send to us. Booklet free. Send us names of 12 persons keeping poultry and we will send you free "The Poultry Manual" by those high authorities F. L. Sewell and Ida E. Tilson, profusely illustrated. WEST COAST STOCK FOOD CO., 818 San Fernando St., Los Angeles, Cal.

RANCHES FOR SALE.

RANCH FOR SALE—240 ACRES IN Mariposa Co., 40 acres under cultivation, balance easily cleared. Plenty of water. Suitable for hay, grain, stock raising, or apple orchard. Price $900. For information, address CHARLES GLISCINSKI, Los Angeles, California.

POULTRY.

HARRISON'S R. I. REDS AND WHITE Rocks. The best out West; 12 awards at Poultry Breeders' Show, including 1st and 3rd Red cockerels, 1st and 2nd Red pullets in a class of 36 pullets; White Rocks 1st pen, 1st and 3rd pullets and 3rd cock. New circular. Eggs $2.00 for 15, $5.00 for 50, $8.00 for 100. LAKE AVENUE POULTRY YARDS, 757 N. Lake Ave., Pasadena, Cal.

FOR SALE—STANDARD BRED WHITE and Buff Leghorn pullets, $9.00 per dozen. White and Buff Leghorn hens, $1.00 each. One small Mann Bone Mill mounted on stand, $5.00; will exchange bone mill for White Wyandotte eggs for hatching. W. O. SHAW, P.O. Box 201, San Luis Obispo, Cal.

SINGLE-COMB WHITE LEGHORNS, FINE white, large, birds; good layers. Hatching and shipping chicks. Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER, Ontario, Cal.

BUFF ORPINGTONS—I WILL HAVE A few settings of Buff Orpington eggs to spare from best stock obtainable. From St. Louis and California prize winners. $3.00 per 12 eggs. MRS. N. F. MORSE, Fullerton, Cal.

FOR SALE—BARRED ROCKS, WINNERS OF 11 prizes and Silver Cup for Best Barred Rock Male at Breeders Show, 1907. Some choice cockerels for sale. Eggs. Write your wants. Frederick Espe, 4425 So. Main St., Los Angeles, Cal.

FOR SALE—WHITE WYANDOTTES, SILVER Cup Winners at late show. Choice Stock for sale. Eggs, $2 per setting, $10 per 100. Mrs. Mary Van Brunt, Avery and Benefit Sts., Hollywood, Cal.

PUPPIES.

FOR SALE—SCOTCH COLLIE PUPS FROM prize winning stock, sired by Brookmere Hopeful, noted Chicago and Detroit winner, and Dos Robles Towser, winner three firsts at Venice. If you want workers get a pup and teach him yourself, he will do the work of two men. Send for circular and pedigree. WALTER S. DAVIS, 337 South Spring street, Los Angeles. At stud, Brookmere Hopeful, Dos Robles Towser.

TREES.

FOR SALE—4000 VALENCIA AND 1000 W. Navels; one year buds on three year roots, clean and vigorous; buds taken from bearing trees. F. E. CHAPMAN, R. F. D. Box 34, So. Craig Ave., Pasadena, Cal.

FOR SALE—MISSION, BLACK SPANISH, and Taft's Kadota Figs; fine trees at 25c and 35c. Order quick if you want them. H. L. BAUER & SONS, 737 South Spring Street, Los Angeles.

PALMS, PALMS, PALMS. TWO YEARS old, field grown. Date palms, carefully packed with moss, 12 for $2, 100 for $10. SOUTHARD NURSERIES, Redlands, Cal.

FOR SALE—20,000 EUCALYPTUS, READY for April planting. Write for prices. A. L. HURTT, San Bernardino, Cal.

WATERMELON SEED.

FOR SALE—FINE RED CHILLEAN WATER Melon seeds. Price 50c a pound. WILLIAM BRITTON, Burbank, California.

CHILEAN WATERMELON SEED.—EXTRA select. No seed from culls. By mail, 4 lbs or less, 75 cents per lb; over 4 lbs, by express 60 cents per lb. S. FAIRBURN, Burbank, Cal.

You Can't Help Having Success with

GLENDALE INCUBATORS

Nothing but genuine merit can account for the widespread success of Glendale Incubators and Brooders. Shrewd arguments can be devised to sell incubators but the real test is what an incubator will do.

There is not much profit in selling Glendale Incubators and Brooders but they give satisfaction and make friends.

Anyone can operate the Glendales. They do not require long study, constant attention and ideal conditions. The Glendales have practically revolutionized the poultry industry. They give results that are little short of astonishing. Their automatic action is almost human in its quick response to change in temperature, its wonderful regulation of ventilation.

Glendale Incubators and Brooders are sold with a positive guarantee of satisfaction or money back.

Why be satisfied with less profits from your poultry industry when Glendales will increase your earnings, save you time and work.

The 120-egg size, $22. 240-egg size, $32. 360-egg size, $42. 500-egg size, $52.

We want you to attend a free demonstration now being conducted. If this is not convenient, write for catalogue.

Johnson & Musser Seed Co.
Dept. 8
113 No. Main St., Los Angeles

COLUMBIAN WYANDOTTES

Winners at Breeders' Great Show, 1907. 21 prizes on an entry of 26 birds. Stock for sale, also eggs $3 and $5 per setting of 15; $20 per 100.

Ed. M. Burnell, South Pasadena, Cal.

DECIDE NOW

Eggs from Rich Golden Buff Wyandotte Beauties

Ribbon and Cup Winners. $2.50 and $4.00 per 15, $10.00 per 100. Guaranteed.

O. S. HOFMAN
Box 133, San Jacinto, Riverside Co., Cal.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

Lost Cud.

I have a cow sick for several days. I milked her in the morning and she gave her usual amount of milk but I noticed she grunted a little, but otherwise seemed to be in good condition. When I went to milk her in the evening she had no milk. She seemed to be bound up, so I gave her a dose of salts which opened her bowels, but she is not well, she don't chew her cud and don't give any milk. She eats very little, just mopes around, the neighbors say she has lost her cud.—J. F., Rincon.

To J. F. The loss of cud is merely a symptom, usually of fever or of indigestion. Examine the cow's nose and see if it is in the natural moist condition, showing a pink pickle of health. I presume you have no clinical thermometer, so try the homely way of taking her temperature by feeling the base of the horn. If hot the cow is feverish, if cold she is weak. Find out by feeling her all over firmly with your fingers if she is tender anywhere about her body; listen to her breathing. Try to find in what part of the body the trouble lies. Any sudden change may give a cow indigestion, changing from green or dry food, or the reverse, too much grain, that is pushing the dry part of the grain above one-third of the roughage consumed. A cold may have settled in her chest. You see this is only guessing. I would try to bring her back to her feed by giving her warm bran mash. Half a gallon of hot water poured on a quart of bran, salt and cover it until cold enough to feed. Then stir in a tablespoonful of a mixture of anise seed and ginger, add a teaspoonful of baking soda. Give her some choice hay to nibble at, if she refuses the bran take it away and feed to something else. If she has any acute trouble it will be better or she will be dead before this appears in print.—M. E. S.

Fatal Bloat.

My cow had been out eating a little during the morning but came in during the afternoon for a drink. As I was going away I left her in the yard. She appeared entirely as usual. At night I fed her the bran, let the calf have her share of milk, milked, then fed cow a leaf of alfalfa as usual.

Everything was as it has been. I saw no change or difference in anything. The cow has been and was at that time perfectly well as far as I know. I passed by her with lantern half an hour later, she was eating her hay; about half an hour after this I heard a peculiar muffled choking brawl, and by the third call I was there with lantern to find the cow lying on her side so swollen her upper legs couldn't touch the ground. There were only a few minutes of this when she stopped breathing. I would say it was less than fifteen minutes from the first cry of distress till she was dead.

I fed the same hay I had been giving, the same amount, and the horse and calf had some of same with no bad effects. The cow's milk that night had no bad effects upon the calf, although in an hour after calf took it the cow was dead.

After death the body continued to bloat terribly and blood oozed from all openings, eyes were nothing but blood by next morning.

Perhaps this conditon is familiar to cattle people, but it seems wonderfully sudden to me.—W. D. G., Lordsburg.

If it's Purina Chick Food, I want it, for I'm a Checkerboard Chick. See my ad, page 315.

Yes! Unfortunately I have lo many cows in just as quick time fro bloating. This is the form that peo rise up and tell you how they sa their cows, when you can truthfu say that it is all over before the is time. I once said I had conclud at times that I did not know an thing about bloating—it came une pectedly and went the same wa One person wrote to me that if I h melted a pound of lard and poured down the cow's throat it would ha saved her. You can see how impo sible it would have been for you have carried out that prescriptio The only thing to do is to stick the but I think that the cow ruptur herself before you reached her, wh she uttered the cry. I have never h more than a couple that recover after they had dropped. The caus I cannot tell only that the ear grasses seem to be acid and cau more gas than the later grass.

In the spring when the first gra comes it is a good preventive to gi the cows with their grain a te spoonful of baking soda. Do not distressed for had all the knowled and appliance of a stock farmer be at hand it would not have saved th cow.—M. E. S.

Contagious Ringworm.

I have a mare that is continual biting her legs and scratching he self against the sides of her sta little lumps about the size of a p form under the skin, and where the form the hair comes out in small spo about the size of a silver 5 cent pie Her colt which is two years old is a fected in the same way. Mr. Kell has consulted the best veterinary do tor here and he don't seem to rea the disease. Will the Cultivator plea tell what the disease is and sugge a remedy.—D. A. K., Ventura.

If these lumps do not break do and discharge it seems fair to co sider this contagious ringworm, t dam having given it to the co White wash the stables thorough wash harness, halter and collars wi strong soap and water. If there any dry, chaffy appearance to the spots wash them well with stro soap and warm water, when dry, r on the following: Iodine one-ha drachm, iodide of potash one drachi vaseline one ounce. Have this mix as an ointment and use twice a da

If the spots are not scaly the fo lowing can be used. Carbolic acid o part, acetic acid 20 parts, paint on with a feather. The colt may hard to keep tied up, if he is, t first oily ointment will do him harm, or chloride of iron can painted on the spots. If anywhe there has been open sores formed the incessant rubbing, these can healed with a cream made with o ounce of lard to 10 grains of nitra of silver. The animal should be c off from grain feeding except a h bran mash at night to open t bowels thoroughly each day, the feed them green feed or hay. The cu will be slow, it will require watchfu ness to prevent reinfection.—M. S.

Sulphuring Machine.

Can you tell me where I can pr curc a machine for sulphurin grapes?—B. J. A., Lancaster.

A number of French sulphurin machines were imported this seaso only a few were offered in the ope market. There are now none for sal Prof. Fred'k Bioletti has one in us at Berkeley, Mr. Frank Swett has o on his vineyard near Martinez.

Either of these gentlemen woul no doubt tell you about them. Th University has a bulletin in press o sulphuring of vines. This will b available almost at once. I am gla to see at last the vineyardist is figu ing on the cost a little of his grape

The knapsack sulphuring machine ses only 13 pounds of sulphur to the cre, while the hand bellows takes 9 pounds, the perforated can takes bout 25 pounds, I do not believe anyne ever dared to even think how uch sulphur was used when it was ut into a small burlap sack and aken over the vines.

The best sulphur we find is the eapest to buy, as it is light ough in weight to make it quite a ifference in the time it lasts. The ssing of frequent stopping to refill saved time. We use the sublimed or owers of sulphur, this is impalpably ne when rubbed into the palm of our hand.—M. E. S.

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ating.

In your next issue will you kindly nswer the following questions: In one your old papers you say that hens at have been running at large with osters should not be mated for irty days. Why is this? Do a great any eggs become fertilized in the vary and require time to get rid of em? If not, what are the facts? Is there any way of telling the age hens?—B. M. G.

At one of the Experiment Stations number of tests were made to disover how long after hens were taken way from the male bird the eggs ould remain fertilized. If I remember rightly it was found that only one gg in twenty was fertile after twenty ays' separation and none after three eeks. Some people think that if a en has once been mated with another reed her eggs will not be sure to be ure bred for the whole of that season, st as if you cross-breed dogs the female will be spoiled. Whether this is e case with fowls I am not prepared say.

After a male bird has been introiced into a pen for the space of a eek the eggs should all be fertilized him, but if the hens have been runng at large with other males I would efer to wait a month.

There is no way of knowing the exct age of hens except by marking em in the feet, or by branding the gs. Experts can often tell an old n by her appearance or actions.—rs. A. B.

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matoes Damping Off.

We have some young tomato plants at seem to be cut off at the base a sort of fish worm that seems be sucking them. They fall over fore the tops die. What can I do stop it?—E. E. M., Bryn Mawr.

Your plants evidently are damping and the worms are there after decomposed matter that is in the soil. rhaps your soil it too wet and has us been favorable to damping off. rth worms like wet places and congegate where there is an excess of isture. It looks as though your nts had been kept too wet. That uld favor damping off and also attact the earth worms. If the plants e several inches high, you may save em by transferring them to clear mp sand till they take a start and en plant them in the field or garen. In the meantime, you had bet- start new plants from the seed. ix plenty of sand with the soil and ep them just moist enough to ow well.—J. W. M.

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ze of Hennery.

Please answer a question or two rough the California Cultivator, and oblige.

Is there room in a pen 25x25 with a ushroom house 6x8 for ten Brown Leghorns? Or would a pen 25x50 th a mushroom house with 20 hens better.—O. P. R.

Either would do equally well. But, think I should prefer the larger yard this climate especially if you have od shade in it.—Mrs. A. B.

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leree.

Is Fileree and Alfilaria the same nt? What is the clover enclosed? D., San Bernardino.

They are the same, being species a plant known to botanists as Erom, of which we have several ecies quite common.

The clover having neither flowers r pods (it should have both) we can dy guess that it may be Trifolium acilentum, which it resembles in ss aspect.

Dark or White-shelled Eggs.

Why do people in California hold preference for white-shelled eggs; are not the brown-shelled as rich and as good?—F. W. F. Greenfield.

Analyses have been made of the different colored shelled eggs by some of the experiment station, among others by our own Berkeley station, and these have proved conclusively that there is practically no difference in the contents of the eggs, and that it is merely a whim of the customer to imagine any difference either in nutriti e value or in flavor. The New York market demands white eggs and the Boston market brown and the San Francisco market follows New York, even if Boston does claim to be the "Hub." Los Angeles uses both kind equally and in consequence there are more of the American breeds of fowls in this neighborhood, whilst near San Francisco the Mediterranean breeds predominate.—Mrs. A. B.

Borers and Crown Knot.

Is there a remedy for the borer? If there is, will you please give it in the columns of your paper? Also, is there is a remedy for the black knot on peaches?—J. C. W., Gilroy.

There is not much chance of helping a tree when it has once been riddled with borers, but they may easily be kept out. If the trees are but recently planted and the borers have not girdled them severely wrap them with sacks and the flies that hatch from the worms will not lay their eggs in the place where the sack is wrapped. To make it more effective, put a little sulphur under the sack. Using a whitewash with sulphur in it is very effective also. If the branches of the trees are in danger of becoming infested, spray them with the wash. It will not hurt the foliage.

We do not know of any remedy for the root knot. It may be checked by cutting out the infected part and washing with blue stone, one pound to ten gallons, but we do not know how to prevent its attacking a tree. —J. W. M.

Horse's Sore Throat.

Can you tell me what is best to do for a mare that slobbers. She is about 14 years old. I had a party who seemed to understand horses fill her teeth and he said she had an inflamed throat and advised a mustard plaster.—H. J. L., Pomona.

She should have her throat blistered and then kept well greased, and then turned out to grass. Many horses will not work when their throat is sore, they plunge and throw themselves. She would be likely to do so if made to trot a mile or so. Now if she cannot be spared to lay off, you might try rubbing her throat with a mixture of oil of turpentine, olive oil and solution of ammonia, equal parts. For internal use, mix 4 ounces of chlorate of potash, 1 ounce of powdered guaiacum in half a pint of molassas. Mix together and put a spoonful on the back of the tongue three or four times a day. If it is necessary to blister the throat, I like this blister, as it leaves but a slight mark on the horse: I drachm of croton oil, sulphuric ether and alcohol, each 10 drachms. Apply with friction.—M. E. S.

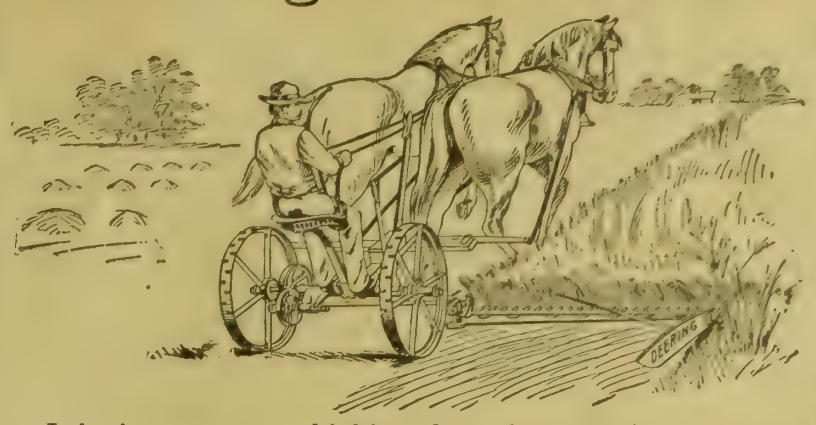
Use of Bordeaux Mixture.

Will it do to spray Emperor grape vines with bluestone and lime? I sprayed my peach trees in December and should they be sprayed again?—H. K., Fowler.

It will improve your vines no doubt to spray them with Bordeaux mixture, 5 pounds of lime, 5 pounds of bluestone to 50 gallons of water. It will hold in check to some degree any fungus, such as mildew, by killing some of the spores. You must not, however, depend on it as sulphur should be used for that after the vines begin to grow and after the grapes are set.

If you have signs of the blight on your peaches, or if it is in the neighborhood, it will pay you to spray again. Do it just after the trees are out of bloom.— J. W. M.

Deering Ideal Mower



It is time you were thinking about the mower you will need this season. Of course you want the best—that means the Deering, for the Deering **IS** the best. It is the lightest draft mower made; is simple and durable, with few parts to wear or get out of order. It cuts from the start in heaviest grass or grain. It's just what you want. We have a few of these machines on hand now and expect to have more soon, but the railroads are very slow in delivering freight from the East and it will pay you to buy now—and be sure of having your machine when you want it. We have the Deering self-dump rakes, too, and there is nothing better.

Hawley, King & Co., Agents

224-228 South Los Angeles St., Los Angeles, Cal.

Wagons, Carriages, Harness, Farm Implements of all kinds.

33⅓%

Is about the extra cost to the buyers of many of the ***cheap***(?) chick foods. Why? Waste—that's why. You buy a 100-lb. sack of so-called chick food, but if your chicks only eat 66⅔ lbs. and the rest is waste, have you not added 33⅓% to the price you paid?

The waste in many cases is lack of knowledge by the makers of what to use and the proportions to use of the various grains. In A. C. W. Chick Food you will find ***no waste.*** Your chicks will eat all A. C. W. and ***digest*** it. A. C. W. is put up in sealed sacks. Accept no substitute. At all dealers or direct from us.

The Agricultural Chemical Works

901-907 Macy Street - - Los Angeles, Cal.

EGGS Ringlet Barred Rocks $1.50 and $2.00 per sitting 15. Black Minorcas (Albert strain) $1.50, and $2.00 per sitting 15. Mammoth Pekin Ducks $1.00 and $1.50 per dozen.

EDWARD A. HALL, WATSONVILLE, CAL.

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8 Varieties of Wyandottes

Each Bred on Separate Farms. Quality Best. Eggs and Stock guaranteed. For particulars write for catalogue.

Queen Poultry Co. **Box 2, Los Angeles, Cal.**

Grafting Wax.

Will you please give through your paper a receipt for grafting wax?—B. M. C., Yuba City.

Wickson gives as a good receipt the following: One pound of mutton tallow, 2 pounds of bees wax, 4 pounds of resin. Melt this all together and stir well while it is boiling. This is much improved by pulling as you would candy. Take it from the stove while hot, pour it into a tub of water that is of such a temper that you can bear the hands in it. Have the hands well greased and pull it till it gets stiff. This will make a stiff wax that will not crack so readily as when not pulled.—J. W. M.

Sucking Cow.

Will you please tell me if a cow that sucks herself can be cured, and if so, how?—C. R., Corcoran.

I have never known a cow cured of self milking. The milking can be prevented by using a halter on her head having a short chain from the ring and fastening a broom stick to it. Then use a broad girth around her body, pass the broom stick beween the front legs and fasten it to the girth. This way is the most humane way of harnessing the cow as she cannot hurt herself.—M. E. S.

Blue Ridge Strain **Blue Andalusians**

We won more firsts in a class of 68 birds than all our competitors combined. Bred for utility and fancy purposes. Eggs, $2.50 and $5.00.

Blue Ridge Poultry Yards *128 Avenue 32 Los Angeles*

El Casco Poultry Yards

200-Egg Trap-Nested Wh. Wyandottes

Egg, $1.50 per 15

S. C. White Leghorns

Large hens. Large white eggs. Eggs, $1.00 per 15, $5.00 per 100. High fertility guaranteed.

J. F. GOETTING, El Casco, California

East Side Poultry Yards

Have pure bloods. Eggs for hatching. Hatching chick a specialty.

Barred Rocks **Buff Orpingtons**

Prices Right

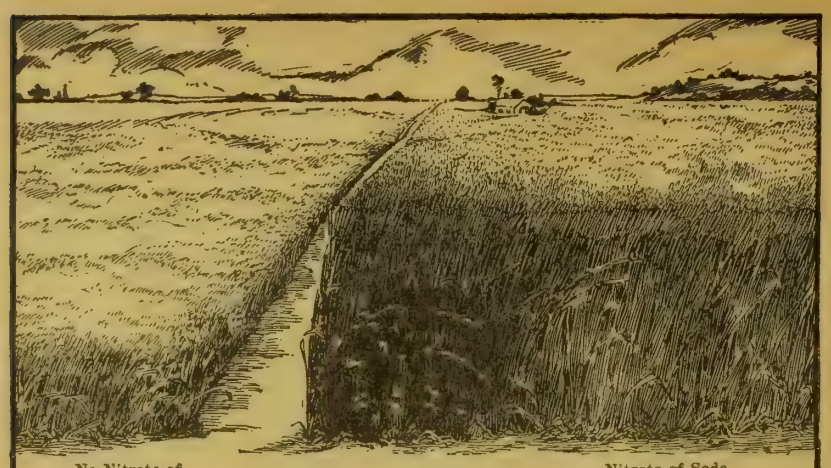
E. J. Look

16 Hancock St. E. San Jose, Cal.

COLUMBIAN WYANDOTTES

Won 1st Cock, 1st Hen, 1st Cockerel, 1st Pullet, 1st Pen and all Special Prizes at San Jose Show in competition with birds from Southern California. ***Eggs, $2.50 per Setting. Stock For Sale.***

R. Walker Mantz, Rural 21, San Jose, Cal.



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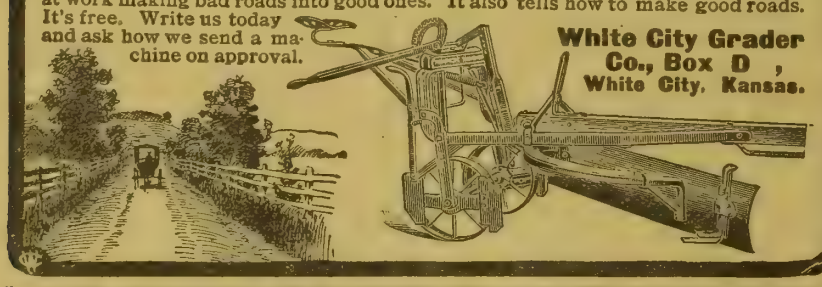

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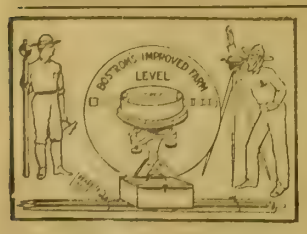

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Citrus Culture and Allied Topics

Continued from page 269

A gentleman, whom I was advising in the culture of his grove, wrote to me that gophers had attacked two rows of his finest trees—seedlings—leaves were yellow, wilting, fruit dropping, and he was sure he was going to lose them. I visited him and on looking at the trees, saw at once that gophers had not been near them.

Situated at the lowermost end of his grove, which had a uniform slope in a single direction, and could be irrigated from one side only, the successive years of irrigation, and rainfall, had buried his trees from eight inches to one foot below the normal depth at which sweet seedling crown, or main roots could run and remain healthy.

I told him that I could save his trees and also the crop thereon, if the slime-mould which had attacked the roots had not entirely encircled the main roots. I prescribed removing the dirt at once, telling him what he would find in the condition of the roots, of the slimy and sour state of the rotten cambium, and what treatment to pursue. In six weeks the trees were renewed in vigor and color, they ceased dropping the fruit, and ripened what remained.

I have had several experiences of this kind wherein my advice has been asked.

As a farther illustration permit me to call your attention to the condition of so many of the sweet seedling groves which one can observe, wherever they exist, with tops filled with dead wood. A direct tax equal to the loss sustained by trees being in a preventable bad condition, would create an uprising among citrus growers.

We complain of high railroad tariffs, but to many a grower the excessive freight is small compared with the loss through a diminished crop which he unnecessarily causes by not knowing what he can readily learn.

I suggest that some elementary reading in soil culture be done. Goodrich's "First Book of Farming," or a book by Voorhees in the Rural Science Series, "First Principles of Agriculture," edited by Bailey, be purchased. Even among old tillers of the soil, there is often need of knowing the primary principles of scientific soil culture.

I once said to the owner of several fine orange grove properties, who was complaining of the dry season: "Stir your ground, make an earth mulch three or four inches deep." He demurred, the ground was too dry already. I then showed him that in the middle of the sandy road where teams were continually passing the moisture was greatest, and nearer the surface than anywhere around us. Proper and frequent stirrings of the soil at the right time conserve the soil water.

Campbell's method of "dry farming" in the semi-arid regions of the western half of the Middle West is based on this fact. 12 inches of rain rightly conserved will do greater crop duty than twice that amount used, or rather neglected, in the customary way.

The reasons for this can be readily learned in one or two evenings' reading. Speaking of the Rural Science Series, edited by Bailey, permit me to say by way of parenthesis, that the most of the series is well worth reading and possessing.

In our modern horticulture we have come to learn the use of fertilizers in a practical and exact way in many particulars, which former generations did not apprehend. Not that we know it all even now, or even the major part of what is to be known, ought to be known, and can be known. But some things I say we do know, e. g.: We know that the soil wherein our plants have their roots, and whence for the most part they draw their nutriment and gather the forces that build their structures, is a living organism practically:—wherein operate and struggle all manner of forces, and agencies that tend to create, multiply, or destroy for recreation; the manifold marvels and wonders of plant and indeed of animal life.

The theory often stated concerning the ground, or soil, is that it is simply the anchorage, which gives stability to the plant or tree. It is that, and more than that. It is a great laboratory, wherein multiplied processes, chemical and biological, are at work—a great store-house of potencies whose energies are protean in character and form.

We do not understand one of a thousand of the infinite transformations, which make possible the growth of grass, or the crops of field and orchard.

A few years ago it was a popular fallacy, that the needs of crops of various sorts could be determined by an analysis of the soil. It is possible to determine the chemical elements in a given quantity of soil, but we have learned in recent years that not all, or even the greater part of the power and potency of life, lies in the chemical constituents of the soil. We have learned that the laboratory of the soil is far different, in its analyses and syntheses of chemical combinations, from the results obtained in the chemical laboratory.

The trees and the plants have a way of their own in this regard. Why, we do not know, it is enough for us to know it is so.

The citrus family in Florida, and largely so in California on some soils, objects to nitrogen derived from organic sources, such as blood and tankage. The chemist says "nitrogen is nitrogen," the citrus says, "not for me. I wish the salts of nitrogen." So of potash. The sulphate of potash is the only correct form for the citrus family. Cotton and cabbage will take kainit and muriate of potash, but the citrus family reject them, and suffering from them—perish. But potash is potash! Not at all.

Asparagus needs a dressing of salt. Salt will kill orange trees. Ferrous oxide of iron will destroy a grove as some Florida growers have learned, but add one molecule of oxygen by drainage, and ventilation through culture, and the orange will thrive.

We of California have been told that our groves do not need potash, that chemical analysis has determined this fact, as obtaining in both soil and our irrigating water. Exepriments with the living trees reveal the fact that the application of sulphate of potash in June is a profitable investment applied in suitable quantity.

I have used a fertilizer analyzing 1[illegible] to 15 per cent. actual potash applying ten pounds per tree. In one case the fruit was sold per pound. The fruit from that grove averaged nine pounds per picking box in excess o[illegible]

the weight per picking box of fruit from other groves well fertilized with ordinary fertilizers. I adduce these illustrations to show that in our dealings with the soil, and its agencies we are treating with a profound and vast array of conditions, which far surpasses our present knowledge to comprehend. We apprehend only a limited number of facts in relation thereto. Some of the facts are set down in books which are profitable for us to read, for example: Hickman on Manures, Griffith on Manures, Voorhees "Fertilizers" (Rural Science Series), and other works.

But after all is said and done the fact remains that intelligent and observant experimentation along lines generally conceded to be approximately correct is the only way to increased knowledge and success. I believe much in modern "book farming' as a basis for scientific reasoning and procedure, but not everything we wish to know, should know and can know, I repeat, is found in books.

There are innumerable problems yet to be solved. It is good this is so, it puts us on our mettle, it gives an intellectual stimulus and mental activity of the profoundest character and widest range in matters pertaining to our calling. Someone has said that a square foot of soil has in it meaning and revelation beyond the span of a man's life to comprehend.

Tennyson found in the chance growth of a tiny flower in a wall the hint of all possibilities of time and eternity in Man and God.

"Flower in the crannied wall;"
I pluck you out of the crannies
I hold you here, root and all, in my hand,
Little flower—but if I could understand
What you are, root and all and all in all,
I should know what God and man is."

The usual type of the soil-worker in books and on the stage is muscular—low of brow and dull of brain, accomplishing his daily task by sheer force of brute strength—"a brother to the ox." Not a few who should be better informed, still regard the soil-tiller in terms of contempt as being "only a farmer."

To him who views the great problems of the modern science of the soil in something like their vast and sublime proportions there is no calling so filled with potencies of inspiration and highest pleasure. The fault of dullness lies in men and not with subjects of their out-of-door calling.

Again there is no class of men who do so much minister to the necessities and the aesthetic qualities of their fellowmen as do the producers of plant and tree life with their products. I repeat that there is no calling that extends over so wide a field of intellectual pursuits, as does the calling, —the profession—of the modern scientific agriculturist and horticulturist.

"If eyes were made for seeing
Then beauty is its own excuse for being."

And if brains were made for use, for beholding the glory of the Lord in the earth, then surely no men have greater occasion for exercising them than he who daily associates with those marvels of life that spring into being and flourish by the intelligence that guides his ministering hand or languish and fail to come full circle in their life's cycle because of his ignorance or neglect.

And beside the mere knowledge that instructs the plant grower how to develop the objects of his culture to their full perfection, how many allied subjects there are to interest him and which in their ultimate relations bear directly on his failure or success.

For example, the instructive use of the microscope has enabled our men of modern scientific methods of study, to tell us many secrets of nature that but for this "wonder-working tube" we could not have not known; for instance, the relation of rain to pollen —first set forth by a German microscopist—or the transmission of malaria and yellow fever by means of different varieties of mosquito. With proper safeguards against bites of these insects the swamps of the south will be as free of malaria as any other portion of the country.

We had an expert out here a year or more ago to tell us some things the smallest acquaintance with the elementary microscopy of fungi would have taught. I have seen men incurring risk of losing 15 to 20 per cent. of their crop after it was picked, packed and loaded into cars by reason of the untold millions of spores, which were in the air of the grove where decayed fruit was permitted to desseminate them through the air; the same were found in cobwebby packing houses with dirty floors and cars that never were cleansed and fumigated since the last shipment was unloaded. A microscope slide with a 3-4-inch circle of glycerine would have caught these spores and the microscope would have told the story. Unfortunately for the grower, he does not know the facts and the packing-house people as a rule are unbelievers. So you and I, if we wish to avoid contemptuous looks and sneering remarks in reply to our suggestions, will keep our mouths shut and our eyes open.

The microscope opens up a whole world of knowledge of those things, which though they are as the small dust of the balance are among the supreme potencies of life and death in plant and animal, man not excepted.

I have not time to enlarge upon this subject; $50 will equip an investigator with a working outfit suitable for all pratical purposes. The simpler investigations are readily made by any one over fifteen years of age who can read and write. This is not mere theory but is capable of demonstration,—the relation of fungi to the destruction of insect life. In Florida many localities are depending on the various forms of fungi to destroy the white fly(Aleyrodes citri), purple and long scales. The red fungus (Sphaerostilbe coccophila) is an enemy of the San Jose scale (on peaches). The grey fungus (Opheonectria coccicola) attacks the long and purple scales.

The red aschersonia (Aschersonia aleyrodes) and the brown fungus attack and destroy the red scale.

An examination with the microscope will show that the Scutellista cyanea in California is subject to fungus attacks under certain conditions, which is the reason why under climatic conditions favorable to the fungus the Scutellista are singularly absent where they have been so plentiful.

Beyond this subject is that of the relation of insects to our citrus culture. This phase of our industry opens into many branches of study which have their problems of much difficulty to settle. Hereon occur the debates between sprayers and non-sprayers: Fumigators vs. Sprayers.

Here as elsewhere the successful citrus culturist must depend on his own intelligence and judgment. Orange and lemon groves represent individuals to a very large extent. The intelligent grower who acts on his intelligence as a rule is revealed in the character of his grove—all other things being equal.

It is well to read Smith on Economic Entomology and Sanderson on the same subject, or the work of that remarkable English entomologist, Miss Ormerod; and whether you are a believer in fumigation, to read "Johnson on Fumigation" will enlighten you on the subject. Not to exceed 2 per cent. distillate mixture will at least do temporary good in some ways to some of our enemies.

The secret of success in citrus culture, as in other callings of life is to "find out!" But to find out, requires open mindedness. I know of a citrus grower who did famously for a matter of two or three years with his citrus crops by liberal application of blood and bone. Hence he was enthusiastic over blood and bone. It was an ideal fertilizer he said. His trees, however, rebelled against the excess of a uniform diet. The grower would not listen to any advice on the subject that ran counter to his practice and belief. He came near ruining his grove. Then he switched off and gave them potash in liberal doses, withdrawing the nitrogen and phosphoric acid, which he had given them. The trees immediately seized on this element of their diet which had been denied them for several years. Of course they revived at once. Then potash was the thing until the trees showed that, like the man who is reputed to have prayed for pepper, they had too much of a good thing.

Florida and California are alike in having some men whose minds are closed to progressive knowledge. Florida had a period of clean culture for groves which came near exhausting the vitality of their trees as it did of sterilizing their soils. The effect on their trees did what reason and intelligent co-operating could not accomplish. We of California will learn the same lesson, and will plan not to exhaust the humus in our soils, but rather to increase it to a normal standard that will maintain a healthy biological condition therein.

Winter cover crops of the leguminosae will come to be a regular method of restoring what the summer heat and cultivation, together with the year's crop and growth, burn and exhaust from the soil. Time may substitute another procedure or make an addition to this method, but apart from application of stable manure and similar fertilizers, there is nothing to take its place at present.

The question is often asked, "Is not bacterial inoculation possible." It may be. It is not a success to the extent that it has become a commercial quality available to the practical production of increased crops. I have tried it. I am aware that in Sweden and elsewhere nitrogen factories have been established, and it may be their products can be bought, sometime in the future, by the horticulturist to his profit, but that time is not yet, at least for citrus growers in California.

In the meantime we must seek more light, and do with our culture, as a famous painter said he did with the color he laid on his picture, "mix it with brains."

Clara.—I wish I could believe what he says, but—!

Maude—What does he say?

Clara—Why, he says he loves me, yet he has only known me two days.

Maude—Well, perhaps that's the

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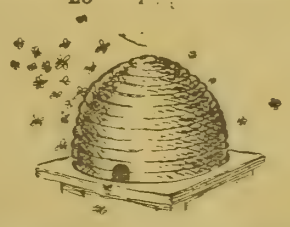

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WRITE FOR PAMPHLET AND PRICES

The Produce Markets

Los Angeles Markets

LOS ANGELES, March, 20, 1907.

There was an average volume of business transacted in the produce market this morning, but owing to the rain just at the time of the call there were few members present and a dull session resulted.

The butter quotation committee made no change in the official selling price of butter. Receipts as shown for yesterday were far above the estimated amount needed to meet consumption, most of which came down from the north by boat. This did not effect the market materially owing to its big cost in the north. If present weather continues the decline in prices which has been predicted for the middle or the last of this week is not likely to take place. Heavy storms in the north are also against a decline and if conditions there remain as they have been for the last two days it is very indefinite when a drop in prices will occur.

Valley Creamery	67½
Coast, fy,	60
Cooking	20

Cheese

Cal. Young American, per lb	20
California Anchor	19
Cal 3-lb. hand	21
Northern	17
Domestic Swiss	20
Imported Swiss	29

Eggs and Poultry

There was no change in the price of eggs. The arrivals yesterady were less than for the two days previous and considering the amount of eggs that are going into cold storage daily the market is about firm at the existing quotations. It was reported that more than ten cars of eggs are now in cold storage.

Eggs, local, per doz.	20
Northern Candled	19
Fresh Eastern	18

The following are average prices which dealers pay to producers for live weight:

Hens, per lb.	15
Young Roosters, per lb.	20
Fryers	21
Broilers, per lb.	22
Old Roosters	8
Turkeys	16@19
Geese	15@16
Ducks	15@16

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lb.	7.75
Prime Steers.	5.50
Heifers	4½
Calves, per lb	5
Sheep, ewes, per head	5.50
Lambs, per head	4.00
Wethers	5.50

Potatoes

Salinas	2.50
Burbank, Local	2.25
Highland	2.25
Sweets, Yellow, per sack	5.00
Colorado	2.05
Minnesota	2.00

Vegetables

There is an abundant supply of vegetables on hand.

Asparagus, lb.	10@12
Beets, per doz	40@60
Bell Peppers, Green, lb	5
Cabbage, sack	1.50
Chili Peppers, Green	30
Chili, Dried, per lb.	13½
Cucumbers, per doz	1.50@1.75
Cauliflower, per crate	3.00
Carrots, per doz.	30@40
Celery, per doz.	40
Egg Plant, per lb	15
Garlic per lb	6
Green Onions, doz. bunches	25@30
Lettuce, per crate	1.00@1.25
Lima Beans, per lb	7@8
Onions, Aust. Brown, sk	135@1.50
Onions Y. Danvers	1.35@1.50
Parsnips, per doz	35@50
Rhubarb, per lb.	5@6
Radishes, per doz	15@20
String Beans, per lb	8@12
Sugar Peas, per lb.	8@9
Turnips, doz bunches.	30@40
Tomatoes, per box	75@1.25
Wax Beans, per lb	16@18

Citrus Fruits

Lemons	2.00
Valencias	1.50@2.00
Navels	1.25@1.50
Grapefruit Seedless	2.00@2.50
Grapefruit seedlinggs	1.25@1.50

Fresh Fruits

Apples, Bellefluer, per box	1.25@1.50
Apples, Ben Davis	1.50
Strawberries,	12@17

Dried Fruits

Evap. Apples, fancy, per lb	9
Apricots	18
Peaches.	12
Pears	12@13
Prunes, fy,	5@8

Beans, Dried

Limas, No. 1, per cwt	4.75
Pink No. 1	2.65@2.75
Lady Washington	2.75@3.00
Small White	3.25@3.40
Black Eyes	5.50@6.00
Garvanzas	5.50@6.00
Lentils	12@15

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb. cans, lb.	7
Light Amber	6½@7
Comb, water white, 1-lb. fms	16
Light Amber	11

Nuts

Almonds, new, per lb.	19@20
Peanuts, Virginia	7
Peanuts, California	6½
Walnuts, No. 1, S. S.	14@15

Hay

Barley, No 1	15.50@16.00
Barley, No 2	11.00@12.00
Alfalfa, Local, per ton	14.00@16.00
Plain Oat Hay, No. 1	17.00@19.00
Plain Oat Hay No. 2.	9.00@15.00
Wheat No. 1	14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, No. 1 per cwt	1.45
Barley (to producer)	1.00@1.05
Rolled Barley	1.30
Corn, per cwt.	1.40
Cracked Corn	1.45
Feed Corn Meal	1.50
Shorts	1.35
Bran	1.20
Oil Cake Meal	2.50
Cocoanut Meal	1.40

San Francisco Markets

SAN FRANCISCO, March 19, 1907.

Butter.

California, ex. per lb	32½
California, firsts	31
California seconds	27½
Packing Stock	23

Cheese

New California, fancy	16
Cal. Young American, fancy	16

Eggs and Poultry

Fresh Ranch Eggs	22½
Eggs, first, per dozen	20
Hens, per doz., small	5.00@5.50
Hens, large	600@7.50
Young Roosters, large	7.00@9.00
Young Roosters, small	4.50@5.50
Old Roosters	4.00@4.50
Fryers, per doz	6.50@7.50
Broilers, per doz	4.00@6.50
Ducks, young	6.00@8.00
Geese; per pair	2.00@3.00
Turkeys, per lb	16@19

Live Stock

Steers. No. 1	9@9½
No. 1 Cows and Heifers	6½@7
Hogs, 80 to 130 lbs	8@8½
Hogs, 250 to 350 lbs.	8
Calves, per lb	5@5½
Lambs, yearlings	6½@8

Potatoes

Salinas Burbanks ctl.	1.65@2.10
Rivers	1.75@1.90
Sweet Potatoes. ctl	2.75@3.00

Vegetables

Asparagus	5@7
Cucumbers, per doz.	1.00@1.25
Chili Peppers, Green lb	15@25
Egg plant per box	3.00@3.50
Green Peas, per lb	6@12
Squash, crates.	65@90
Onions, Red, per sack	75@1.00
Onions, Yellow	75@1.00
Peppers, Green Bell	25
Rhubarb, per box	1.25@2.00
Squash, crate	65@85
String beans	15@17
Tomatoes, Mexican	1.75@2.50
Wax Beans	15@17

Citrus Fruits

Arrivals of oranges were less than expected, only three carloads being reported making 12 for two days.

Lemons	75@2.50
Navels	1.00@2.00
Seedlings	1.50
Grapefruit, seedlings	1.00@1.50
Grapefruit, seedless	2.00@3.00
Limes	3.50@4.00

Fresh Fruits

The early morning trade was fairly good, but the market afterward became quiet. Owing to washout and trouble from floods, goods expressed from this city to points along the Central Pacific were either turned back or not accepted beyond Sacramento. Pears have been dropped from the list.

Apples, per box	1.00@2.00

Dried Fruits

Apples (evap.)	6@8½
Apricots. per lb	16@20
Figs, white	4@5
Prunes	3@4½
Peaches	10@12½
Raisins, seeded (1906)	8½@10
Thompson, unbleached	7½
Thompson, bleached	9@11

Beans and Seeds

The demand for Beans continues fairly steady, with the preference still in favor of the colored varieties.

Limas, No. 1	4.10@4.15
Pink	2.10@2.25
Large White	2.00@2.35
Small White	2.80@2.95
Black Eyes	4.50@4.65
Red Kidneys	3.00@3.50
Bayo	2.30@2.50

Hops

Desirable grades of California, 1906 crop, future delivery, 10@12 cents per lb, with occasional sales at 12½ cents.

Nuts

Almonds new	14@18
Peanuts, Viginia	6½
Peanuts, California	5½@6
W lnuts	15@16

Honey

Clear White Comb	16½
Amber	14@15
Extracted	5½@7

Hay

Alfala, local	8.00@12.00
Oat	15.00@18.00
Wheat. No 1	18.00@20.00
Wheat, No. 2	13.00@16.00

Grain

Wheat No. 1	1.32
Barley No. 1	1.15@1.17
Corn, small yellow	1.50@1.55
Corn, yellow	1.27@1.30
Oats, White	1.42@1.60
Oats, Red	1.30@1.60
Ground Barley, per ton	24.50@25.50
Bran per ton	21.50@22.50
Straw, per bale	45@75
Feed Corn Meal, per ton	31.00
Cracked Corn per ton	32.00
Oil Cake Meal, per ton	38.00
Cocoanut Cake, per ton	27.00
Calalfa Meal, per ton	21.00
Mealfalfa, per ton	21.00

Citrus Market

New York Market.

March 19.—The market is very steady. Weather unfavorable. It is snowing and raining. Twenty cars oranges sold today.

NAVELS—	AV.
Old Mission fy, C C Chapman	2.55
Old Mission, ch C C Chapman	2.45
Golden Eagle st C C Chapman	2.35
Slover Mtn o r Colton Dist	2.55
Corwin's ex fy W S Corwin	3.00
Corwin's ch W S Corwin	2.90
Eagle Head T I., I L Lyons & S	3.20
Buffalo Head ch I L Lyons & S	2.35
Lion Head ex fy I L Lyons & S	2.30
Tiger Head ex fy I L Lyons & S	2.45
Independent fy Highland Dist	2.80
Independent ch Highland Dist	2.90
Warrior ex ch Stewart Ft Co	2.60
Signal ex fy Stewart Ft Co	2.60
Warrior ex ch Stewart Ft Co	2.30
Sky High ex ch C C U	2.15
Squaw fy Patte & Lett	3.15
Success ex fy F H Speich & Co	2.80
Heap Good fy S B Ft Ex	3.15
Gold Buckle ex fy S B Ft Ex	3.15
Lochinvar, ex ch S B Ft Ex	3.20
Pointer ex ch A C G Ft Ex	2.30
Red Globe ex ch Riv Ft Ex	2.40
Overland ex fy R H Ft Ex	2.85
Pointer T. I. A C G Ft Ex	2.40
Stag T I A C G Ft Ex	2.30
Pointer ex ch A C G Ft Ex	2.65
Quail ex ch O K Ft Ex	2.30
Trail ch S T Ft Ex	2.55
Canon st S T Ft Ex	2.60
SEEDLINGS—	AV.
Vista de Robles	3.00
Placer	2.80
JAFFAS—	AV.
Vista de Robles	2.90
TANGERINE HALVES—	AV.
Slover Mtn o r Colton Dist	1.80
Stag, ex fy A C G Ft Ex	1.25
BLOODS—	AV.
Old Mission fy Chapman's	3.65
Golden Eagle st Chapman's	3.30

CORRECTION—

Sunnyslope brand of navels sold in Philadelphia yesterday for $3.00 and in Boston on March 13 for $2.65, should have been credited to the Randolph Fruit Company.

March 18.—The market is very strong and higher in spots on 150s to 250s. The attendance was large and the demand active. The weather was very favorable. Forty carloads sold today.

NAVELS—	AV.
Sweetheart fy H G Ft Ex	3.10
Eagle ex ch H G Ft Ex	2.60
La Mesa ex fy H G Ft Ex	3.05
Gold Buckle ex fy S B Ft Ex	2.90
Lochinvar ex ch S B Ft Ex	3.35
Blue Globe ex fy Riverside Ft Ex	2.80
Red Globe ex ch Riverside Ft Ex	2.45
Riverside st Riverside Ft Ex	2.70
Red Shield ex ch A C G Ft Ex	2.25
Tiger fy S B Ft Ex	2.70
Eagle ex ch H G Ft Ex	2.40
Iris ex fy D M Ft Ex	2.50
Violet ex ch D M Ft Ex	2.45
Fiesta ex ch Riverside Ft Ex	2.90
Warrior ex ch Stewart Ft Co	2.85
Rescue ch Stewart Ft Co	2.75
Mill Creek ex ch Crafton O G A	2.75
Excelsior ch C C U	2.05

Yes, this is how I hurry to get Purina Chick Food. I'm a Checkerboard Chick. See my ad on page 315.

Sunflower ex fy C C U 2.50
Anemone ex ch C C U 2.40
Topaz ex ch C C U 2.15
Criterion o r Penn Ft Co 3.10
Signet Thompson's Imp Reds C A 3.25
Colonel ex ch Red C A 2.85
La Belle st Mutual Or. Disbr 2.20
Florencia fy J M Riley 2.05
Clover ex ch Reds. O G A 2.35
Orchard o r National Orange Co 3.35
Standard st National Orange Co 3.05
Old Mission fy C C Chapman's 2.60
Old Mission ch C C Chapman's 2.45
Golden Eagle st C C Chapman 2.35
Whittier fy Redlands Jct 2.65
Whittier ch Redlands Jct 2.55
Independent fy Highland Dist. 3.00
Independent ch Highland Dist 2.80
Fountain ch Stranchan Ft Co 2.60
Santa Fe st Strachan Ft Co 2.30
Gypsy Queen ex fy M & G 2.65
Carnation ex ch M & G 2.30
Flower o r Upland Dist 2.45
Flower ch Upland Dist 2.25
Vista Bonita fy Hemet Dist 2.75
Vista Bonita Hemet Dist 2.50
Lion Head ex fy I L Lyon & Sons 2.65
Tiger Head ex ch I L Lyon & Sons 2.20
Buffalo Head ch I L Lyon & Sons 2.20
Kiser Lordsburg Dist 2.70
Sunshine Grove J F Bowen 2.70
Whittier fy, Redlands Jct 2.65
Whittier ch Redlands Jct 2.55
Orange Prince Collins Ft Co 2.85
Orchard Queen Collins Ft Co 3.00
La Loma Queen 2.75
Dos Palmos ex ch S Marino Gr A ..2.30
El Toreador st S Marino Gr Assn 2.55
Criterion o r Penn Ft Co 2.65
Palm Tree ex ch A H Ft Ex 2.85

Seedlings—Oroville, $2.85; Auto, $2.30; Vista de Robles, $3.00 Bloods—Golden Rule, $3.30; Fancy Mission, $3.55. Tangarines, (halves)—Blue Globe, $2.20; Blue Seal, $2.20. Grapefruit (halves)—Signet, $1.65.

Bost n Market.

March 18.—The market is very strong and weather favorable. Eighteen carloads sold and twenty-one on tracks.

NAVELS—	AV
Orchard or r National Orange Co.	$3.25
National st National Orange Co.	2.85
Standard st National Orange Co.	2.85
Alpha ex f Riverside Ft Co.....	3.10
Elk ex ch Riverside Ft Co	3.00
Highlander ex f Highland F G A.	2.80
Cactus ex ch Highland F G A....	2.55
Signal ex f Stewart Fruit Co.....	2.10
Warrior ex ch Stewart Fruit Co..	2.05
Rescue ch Stewart Fruit Co.....	2.55
Warrior ex ch Stewart Fruit Co..	2.50
Cavalry f Cal Citrus Union.....	2.30
Sweetheart ex f H G Ex Highgrove	3.25
Eagle ex ch H G Ex Highgrove ..	3.05
Golden Rule ex ch Riverside Ex..	2.80
Cosmos f S B Ex Yerkes.....	2.45
Rose ex f Redlands O G A.....	3.20
Clover ex ch Redlands O G A.....	2.80
Clover ex ch Redlands O G A.....	2.35
Independent f Highland Dist.....	2.90
Independent f Highland Dist.....	2.80
Independent ch Highland Dist....	2.85
W Highlands f Highland Dist	2.50
Florencia f J M Riley.....	2.45
Slover Mtn or r Colton Dist	2.45
San Pasqual	2.40
Ville Vista f Hemet Dist.....	2.65
Rossmoyne or r E M Ross.....	2.55
Queen Bee ex f Q C Ex Corona....	3.00
Pine Cone ex f S B Ex Highland..	3.00
Arrowhead ex ch S B Ex Highland	2.90
Zebra T C Ex Lindsey.....	2.80
LEMONS—	
Bridal Veil	3.45
White Cross Cal Citrus Union....	2.75
TANGERINES	
Slover Mtn or r Colton Dist.....	1.65
Golden Rule ex ch Riverside Ex....1.80	

Pittsburg Market.

March 18.—The market is steady. Weather favorable. Nine carloads sold today.

NAVELS—	AV
Iris ex f D M Ex Duarte.....	$2.55
Violet ch D M Ex Duarte.....	2.70
Jasmine st D M Ex Duarte.....	2.70
Green Crown st A C G Ex Azusa..	2.05
Hunter st A C G Ex Azusa.....	2.15
I X L ch Benchley Fruit Co.....	2.40
Yule Tide f Red Mutual Or Co..	2.55
I X L f Benchley Fruit Co.....	2.35
Redlands Best Bryn Mawr As....	2.55
Redlands Pride Bryn Mawr As....	2.70
Camillia ex f Red Mutual O G A..	2.70
Blossom ex ch Red Mutual O G A..2.80	
Orchard or r National Orange Co..	3.05
Standard st National Orange Co..	2.75

Philadelphia Market.

March 18.—The market is very strong on navels and weather is favorable. Nine carloads of oranges, one of lemons and three Floridas sold.

NAVELS—	AV
Sunny Slope E J Oatman.....	$3.00
Eagle Head ex f I L Lyon & Sons	2.65
Buffalo Head ch I L Lyon & Sons	2.20
Defender ex ch Altland Fruit Co	2.60
Stag ex f A C G Ex Azusa.....	2.60
Stag Thom Imp A C G Ex Azusa..	2.60
Pointer Thom Im A G C Ex Azusa	3.25
Clover ex ch Redlands O G A....	2.65
Clover ex ch Redlands O G A....	2.40
B Keystone f King Fruit Co	2.40
B Keystone ch King Fruit Co....	2.50
Native Sons st King Fruit Co.....2.20	
Salt Lake st King Fruit Co.....	2.20
Pointer ex ch A C G Lateen Spr..	2.40
LEMONS—	
Watchuma ex ch Lemon Cove....	2.95

Cleveland Market.

March 18.—The market is very strong and the weather favorable. Seven carloads sold.

NAVELS—	AV
Herald ex ch W Amer Fruit Co..	$3.10
Pico st S T Ex Whittier.....	2.40
Pine Cone ex f S B Ex Highland..	2.70
Arrowhead ex ch S B Ex Highland	2.50
Tulip ex ch T C Porterville.....	2.95
G Flower ex f Redlands G O A....	2.45
Golden Gate ex ch Redlands G O A	2.40
Overland ex f R H Ex Redlands..	3.00
Rebecca ex ch R H Ex Redlands..	3.05
Brook st R H Ex Redlands.....	2.75
LEMONS—	
Trail ch S T Ex Lamanda.....	3.25
Canon st S T Ex Lamanda.....	2.50

St. Louis Market.

ST. LOUIS, March 18.—The market is very strong and weather favorable. Eight carloads sold and four on track.

Cincinnati Market.

March 18.—The market is advancing and the weather is favorable. Two carloads on tracks.

CITRUST FRUIT SHIPMENTS.

LOS ANGELES, March 19.—Oranges 245, lemons 14. Total to date this season, 10,500 cars, of which 1130 cars are lemons. Total to same date last season, 2180 cars, of which 1361 were lemons.

Young Bride: "What miserable little eggs again! I really must tell the grocer to let the hen sit on them a little longer."

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HARVEST TIME

WITH THE LEAST EFFORT

That's what you want—the best harvest results at the least expense of time and labor.

When your grain and grass ripen, you are too busy to waste any time on needless work or on delays and breakdowns.

Every minute counts.

That's the reason you buy harvesting machines—to save time and labor.

And the better the machine, the surer you can be that it *will* save time and labor—that it will go right through the harvest without a stop or hitch or delay, from start to finish.

You want to be sure *now*, that you are ready for harvest.

Be sure that you have a machine that will cause no trouble at your busiest time.

Be sure that your machine will get all the grain you have grown, with the least possible waste.

Be sure that it will be easy on your team, that it will give you long service, that you can get repairs for it easily and quickly when repair parts are needed—in short that you can depend upon it at all times.

You cannot tell a great deal about a machine by looking at it.

But its *record*—its performance in the field—what it has done for the men who have bought it and used it through a number of years—*that* tells a story which means everything to you.

Of the many types and styles of harvesting machines put on the market in the past thirty to forty years, there are a half-dozen that have always stood head and shoulders above the others.

Why? Why have the

Champion, McCormick, Osborne, Deering, Milwaukee, Plano—
HARVESTING MACHINES

always been such great leaders? Why have farmers purchased them in so great numbers? Why are they used the world over, wherever grain and grass are grown? Why do they hold the supreme position they do? You know the reason.

There can be but *one* reason, and that is this:

They have always done good work—they have satisfied their users—they have *proved* by a generation's use that they can be depended upon.

Their popularity and their reputation have not come by chance.

They have earned their reputation by their work in the field.

They have won their popularity by deserving it. And it is impossible to get a higher endorsement than that.

Today, these six lines of harvesting machines, the International line, are more popular than ever before, because they are better than ever before.

By working together the several manufacturers have been able to improve the principles of construction, to improve the quality of materials used, to improve workmanship, and to employ every means that will increase the machines' efficiency, durability and satisfaction.

The underlying principles of these machines are what thirty years' time, thirty years' experiments, thirty years' practical tests at the hands of grain and grass growers, have proved to be the best, and by working together, the manufacturers are able to maintain experimental shops, and to conduct field experiments which would be impossible for any one of them working alone.

In this way they are able to discover and devise better methods of operation, better principles of construction and so to make the machines more efficient, more easily operated—better for you and better for your pocketbook.

The enormous demand for these six leading makes of harvesting machines gives their manufacturers the first choice of both materials and skilled labor.

They are able to own and operate their own coal and iron mines, their own smelters and steel mills, their own lumber camps and saw mills.

At the same time, the choicest materials in all these lines are offered first to these manufacturers because they are such large purchasers.

In this way they are independent of fluctuating markets, and are able at all times, to select for every machine they make, only material of the first quality and the highest grade.

The same condition exists in regard to skilled labor. Experts in every line naturally turn to these manufacturers so that they are able to maintain an organization which they could not possibly maintain were they working separately.

These are some of the reasons why so many farmers cannot be persuaded to buy other than the International line of harvesting machines.

They are made *right*, on the right principle, from the right materials, and as a natural result they do the work they are designed to do in a most satisfactory manner.

In all conditions of grain, light, heavy, standing, down or tangled, they can be depended upon with absolute certainty. With one of them you can be sure that you will get *all* your crop at the least expense of time and labor, with no delay, no trouble, no annoyance. Isn't that the kind of harvesting machine you want? Don't delay, then; don't wait until harvest is upon you.

See the International Dealer and get a catalogue of whichever machine you want.

If you don't know an International dealer, write to nearest general agency for catalogue. Don't forget this other advantage. If your team runs away or an accident occurs, you can *always* get repairs for an International machine, near at hand, and they *always* fit. Repair stocks with local agents everywhere.

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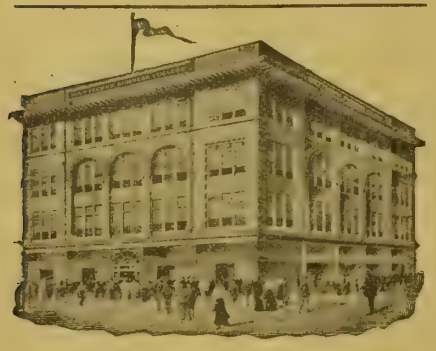

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Household Department

WORTH WHILE.

It is easy enough to be pleasant
When life flows by like a song,
But the man worth while is one who will smile
When everything goes dead wrong.
For the test of the heart is trouble,
And it always comes with the years,
And the smile that is worth the praises of earth
Is the smile that shines through tears.

It is easy enough to be prudent
When nothing tempts you to stray,
When without or within no voice of sin
Is luring your soul away.
But it's only a negative virtue
Until it is tried by fire.
And the life that is worth the honor on earth
Is the one that resists desire.

By the cynic, the sad, the fallen,
Who had no strength for the strife,
The world's highway is cumbered today;
They make up the sum of life.
But the virtue that conquers passion
And the sorrow that hides in a smile—
It is these that are worth the homage on earth,
For we find them but once in awhile.
—Ella Wheeler Wilcox.

A FORTUNATE FIND.

"IF we had but a few hundred dollars, Hans," said Gretchen, "it would be possible, but with nothing what could we do? Our wages are too small to save anything. We should have to pay all we earn for board and would never have a home. Let us wait awhile."

Hans did wait awhile, but there seemed no more prospect after it than before, and he grew impatient. Gretchen coaxed him telling him she had saved $60 during the year and if he would save the same in three years they would have enough to buy furniture and could go to housekeeping. Then together they might live cheaper than apart and save more money for the family to come. Three years seemed a long while to Hans. Besides, a man is not as good at saving as a woman, and he had not put by more than half what Gretchen had.

One day when Hans was walking on the street he saw right under his nose a fat pocketbook. Some one had evidently dropped it but a moment before, for people were passing continually. Hans picked it up and hurried on, thinking to overtake the owner, for he was an honest fellow, and every one he passed he asked if he had dropped anything. All looked at him in surprise, and some felt in their pockets, but no one claimed the property. Then Hans, thinking that the loser must have been going the other way, desisted. He took the pocketbook to his room, opened it and found $650 in bills. He carried it to Gretchen, and they consulted what they should do. Neither of them thought for a moment to keep what would be a treasure to both, and they decided that Hans should take it to the police, who would doubtless try to find the owner.

The next morning Hans started for the police office and, passing a point near where he had found the pocketbook, saw a notice posted of the loss and saying that if it with its contents was returned a quarter of the contents would be given to the finder. Hans went back to Gretchen and told her of the notice. "We are in great luck," he said. "A quarter of $650 is $162.50. With that we can buy enough furniture to commence housekeeping. Gretchen admitted that it would certainly bring them nearer to their desires and advised him to go at once and deliver the money.

He found the man who had lost it a disagreeable looking creature with blear eyes, snaggle teeth, a hook nose and a cunning expression. Hans handed him the pocketbook. He opened it, felt of it, looked in it and, effecting great surprise, asked:

"Vere is the di'monds?"

"What diamonds?"

"The di'monds that vere in the pocketbook with the monish."

Hans declared that there were no diamonds, whereupon the Jew began to abuse him for a thief. Hans, beside himself with rage at being accused of swindling and especially at his accuser's evident intention to deprive him of the promised reward, made a dash for the pocketbook. The Jew cried lustily for the police, and an officer came running into the shop. Hans and the Jew stated their case, and the officer took them before a magistrate, together with the pocketbook and its contents. The magistrate heard the story of each, giving especial attention to the Jew's statement, asking him many questions respecting the jewelry, their size and value. Then he questioned Hans, drawing out the circumstances of finding the treasure and his returning it. When he was satisfied as to the merits of the case he turned to the Jew and asked:

"For what did you advertise?"

"A lost pocketbook, your honor, containing $650."

"And how many diamonds?"

"No di'monds, your honor."

"Why didn't you mention them?"

"Because I didn't want any one who found them to know what they was."

"That was very prudent of you. Knowing their value, the finders would have been more likely to keep them."

"Yes, your honor."

"And the money and the diamonds were in the pocketbook?"

"Yes, your honor."

"The contract you made with the finder was to return a pocketbook containing $650 and you would give him a quarter of the amount for a reward?"

"Yes, your honor."

"Very well. Since this pocketbook contained only $650 and no diamonds it can't be yours." Then, turning to Hans: "You keep the pocketbook and the $650 until the owner calls for them and if he never calls for them they are yours."

The Jew protested, but the magistrate was inflexible. He cried and wrung his hands, while Hans walked away with the pocketbook, followed by the Jew, who offered him all the money if he would give up the pocketbook. Hans would do nothing till he had seen Gretchen, so he declined the offer. The Jew offered more and more money till by the time he had reached Gretchen the amount was $6,000. The lovers offered to accept the amount if he would state his reasons for offering so much; thereupon the Jew asked them to open the pocketbook and show them an inner pocket containing diamonds worth $20,000.

The lovers decided to refer the matter to the magistrate, who awarded them an amount equal to one-quarter the value of the contents of the pock-

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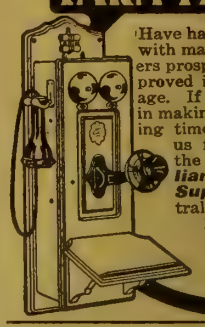
FARM TELEPHONES



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Good Laying Strain
Take Redondo car via Gardena to Strawberry Park
Stanley Senter, Gardena, Cal.

etbook, the sum offered for its re-turn. This amounted to $5,162,50.

Hans and Gretchen got married, bought a little house, furnished it and have since been living happily to-gether. They consider America a great country.—Bertha D. Hurley.

ART OF WRITING LETTERS.

The writing of letters is something n which all of us are more or less in-terested. However, reluctant we may be to write a letter, we usually experi-ence a pleasurable sense of anticipa-tion when we receive one.

We are told that the art of writing etters is dead. Surely, in this age of wide-spread education and high-class iterature, this cannot be true. Not the ability, but rather the incentive is acking.

So many persons still cling to cer-ain time-worn experessions, each let-er being nearly a repetition of former ones, that correspondence becomes irk-some and soon dies a natural death.

Let your letters breathe of your own ndividuallity. Strive for originality of thought and expression. Be careful in your choice of stationery, in spelling, n construction and in the general ap-pearance of your letters. The ability to write correct and interesting letters s worthy of special effort.

It is surprising how many fairly well educated women, who are above criti-cism in matters of dress and the ap-pointments of home, are shockingly careless in their letter writing.

Lack of proper training in early life may, to a certain extent, be responsible for this. More painstaking attention should be given to this subject in the anguage and grammar grades of our ublic schools.

Special inducements, such as prizes, may be offered, if necessary, to stimu-ate interest, and the work continued ntil the student is enabled to paint is thoughts in beautiful word pic-ures—a delight to himself and his orrespondents.

Let the reformation begin, and rest ssured that every such white-winged nessenger sent speeding on its way vill be to its recipent a powerful in-entive to greater effort.

ORCHARD POINTERS.

An orchard with the trees planted ar apart is more profitable than the losely set orchard after the first few years of bearing. But the distance should vary somewhat according to soil and variety planted.

In pruning young apple trees do not cut back the limbs when it may be avoided if early bearing is desired. Fruit buds first form near the ends of the older branches, and multiply back n succeeding years. If cut back the new growth needs two or three sea-sons to gain sufficient maturity to form fruit spurs. Thin out branches where necessary and keep tree in shape without sacrificing leaders.

Orchards well located and in full bearing are worth anywhere from $500 to $1000 per acre, according to their location and nearness to good mar-kets. Many a ten or twenty acre or-chard has paid to its owner the full purchase price with one season's crop. Good orchards cannot be bought for any price because their owners know that they cannot invest in anything that will pay the same dividends.

While she cannot throw a stone, a girl can heave a sigh.

A good cow coins her owner a little money every day.

THE WOMEN OF CHILI.

The women possess a beauty of their own, and in a social gathering at the Chilean capital one will see as many charming women, as well dressed and possessing the most per-fect manners, as in any city of its size in the world, says a writer in the Na-tional Magazine for February.

Possibly one secret of their at-tractiveness, and that of the children, is that they seem to be physically strong, and rejoice in that best of blessings, radiant good health, and while the Chilean is of Latin stock, the women have nothing of the frivol-ity and heartlessness of the Parisian. Society, both in the upper and lower ranks, is permeated by a genuine re-spect for woman which makes itself felt everywhere.

On the street, at the theater, in pub-lic places, the spectacle of the loud-voiced, flirting young woman is ab-solutely missing, and the public con-duct of the women of all classes is above reproach. Outrages against women and girls, such as shock the sensibilities of decent people in Chi-cago, New York and other American cities, are unheard of in Chile. In the forenoon the streets of Saniago are filled with women, who wear the "manto," the Spanish wrap which con-ceals all the person except the face. This picturesque garment is passing from popularity in Peru, but it still holds sway in Chile. Yet on festive occasions, Chilean maids and matrons make themselves attractive with the best Parisian styles, which they know how to wear in a modest and woman-ly manner.

INJURY BY RABBITS.

The following is the plan for pre-venting rabbit injury to fruit trees. given by a Missouri orchard owner:

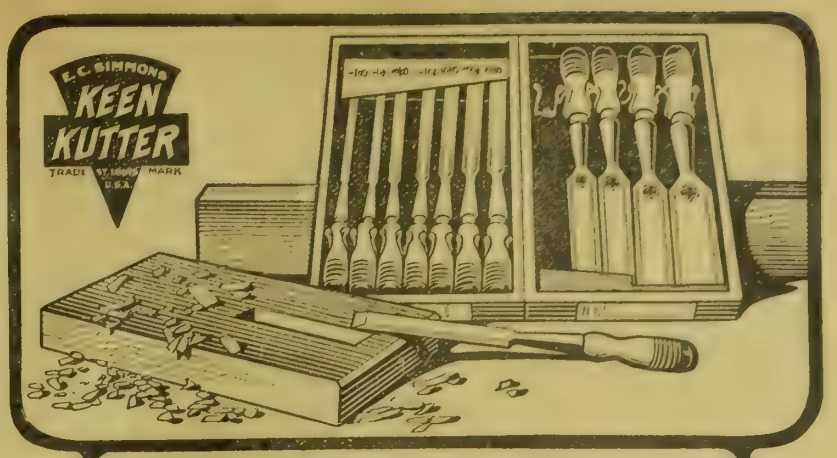
"For years I have discarded washes and used the strongest paper I could find. Some periodicals of extra heavy texture I lay away expressly for this work. One sheet about eighteen inches long is enough for one tree. Cut strings into six-inch lengths, and after wrapping the young tree, tie the paper twice, above and below. It will often stay on for two years if not removed in the spring, which it is best to do for the health of the bark.

A pruning knife should be at hand to cut off spurs and sprouts that would interfere with the fitting of the paper. A little practice at wrapping and tying will soon enable you to do the work quite rapidly. It is better to thus safeguard the trees early in the fall for I have seen trees gnawed in September, but unless rabbits are very plentiful they will usually not molest the trees until snow falls.

The best rabbit trap is the box about two and one-half feet long, with the rear end covered with wire netting to give the appearance of being open. It has a drop door in front with the usual trigger arangement through a hole in the top. Bait with something the rabbit has not got. A cabbage leaf is good.

CREAM OF TOMATO SOUP.

One quart stewed tomatoes or one quart of canned ones, one small onion, one bay leaf, one stalk celery, one sprig of parsley, one teaspoonful sug-ar, two level tablespoons butter, four level tablespoons browned flour, one-half cup of milk. Put the tomatoes in a saucepan with the onion, bay leaf, parsley and celery; let it stew about 10 minutes. Press through a sieve.



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are *all* successful tools—tools that have won their way by hard, honest, true work. Every step in their success has been reached by sheer force of *merit and quality.* Keen Kutter Tools include—Saws, Chisels, Bits, Gimlets, Awls, Planes, Hammers, Hatchets, Axes, Drawing-knives, Pocket-knives, Screw-drivers, Files, Pliers, Glass-cutters, Ice-picks, and a full line of Farm and Garden Tools. For 37 years Keen Kutter Tools have been sold under this mark and motto:

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BARRED PLYMOUTH ROCKS
Ocean Blue Strain

We are booking orders for eggs from our famous prize winning strain, bred in line for 19 years, and never de-feated in the show room. Our pullet pens are headed by the best sons of our 1st and 2nd prize pullets at the big 1906 show, unexcelled in shape, color, and head points, pullets laying at 4 months and 18 days. Cockerel pen headed by our 2nd Cockerel, 1906, a grand bird properly mated to ten females of same line; none better. Eggs, pullet pens, $3.00 and $5.00 per 15; eggs, cockerel pens, $5.00 straight; $20.00 per 100 from all pens Stock must be seen to be appreciated.

Mr. and Mrs. D. T. Wieland, Moneta, Cal.

Take Redondo car, Second and Spring St., via Gardena, get off at Illinois St., right on the ranch.

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Orders booked now for eggs from our prize-winning Arrowhead strain $2.00 and $3.00 per sitting of 13; Special matings $7.00 per sitting of 13.
STOCK AND EGGS FOR SALE. SEND FOR CIRCULAR
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You can win with my stock and eggs because I have won and am winning. Matings this year very fine. Inspection invited. Write me your wants. Eggs $2, $3 and $5 per 15.

Williams' Shaving Soap

HARD-WORKING farmers usually have strong, wiry beards, and need the best shaving soap to soften them. Ordinary soaps only smart, and irritate the face and sometimes poison it. Williams' Shaving Soap softens the beard in a wonderful way, and leaves the face soft and refreshed after shaving.

THE J. B. WILLIAMS CO'S BARBERS' BAR SOAP

"The only kind that won't smart or dry on the face."

Send 2c. stamp for a TRIAL CAKE of Williams' Shaving Soap, or 4c. for a Williams' Shaving Stick, trial size, enough for 50 shaves. Address
THE J. B. WILLIAMS COMPANY
Department A, GLASTONBURY, CONN.

Why doesn't Genasco Ready Roofing dry-out, crack and let the water in, like roofings made from coal-tar and other residual pitches?

Simple enough. Oil is the life of ready roofing—as it is of harness-leather. So long as the oil stays in, the roof is waterproof. If the oil evaporates, the roofing becomes brittle, cracks, and lets the water in.

This is why these pitches do not make good roofing. Their oils dry-out quickly at ordinary temperature—you know how soon tar-paper gets brittle.

Genasco Ready Roofing is made of natural Trinidad Lake asphalt—abundant in natural, permanent oils which do not evaporate in the hottest summer weather. Genasco does not become brittle; Genasco does not leak.

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The highest degree of style, fit and workmanship are embodied in these splendid shoes. There are none that equal them in appearance and wearing quality at the price. They are

BUILT ON HONOR

That's what the name means. That's what a trial will prove. By all means wear "Honorbilt" shoes. Demand them of your dealer—INSIST. Sold everywhere. If you cannot get them write to us.

We also make the "Western Lady," and the "Martha Washington" comfort shoes and a full line of men's, women's and children's shoes. Our trademark is stamped on every sole.

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MILWAUKEE F. MAYER BOOT & SHOE CO. CUSTOM MADE Trade Mark

Western Branch—Washington Shoe Mfg. Co., Seattle, Washington

Use Tom Lewis' Fertilizer for Orchard, Garden and Field

Free From Weeds My stock is now ready. **Immediate shipment guaranteed.** Single sacks or carload lots. **My testimonials are the finest.** Send for circular and prices. **Office and Works: 1916-1918 10th St., Sacramento, Cal.**

When writing advertisers, mention Cultivator.

Bees and Their Care

BEES AND FRUIT GROWING.

LET us now look upon the other objection to the culture of bees in connection with horticulture, the depredations of bees upon friuts. I think that if it can be shown that the bees prey only upon damaged fruits, and this only in exceptional circumstances, the verdict will be in their favor, for damaged fruit, when hanging upon the trees or the vines, is of but little value.

If not harvested at once, it will rot, so the bees gather only that which would be soon wasted. But do the bees damage ripe fruit, which is sound? An examination of the mandibles of the bees in comparison with those of many of the hornets and wasps reveals the fact that while those of the hornets are like saws, the mandibles of the bee are rounding and barren of teeth.

The bee's jaws act from side to side instead of up and down as in the animal's, and they are shaped like spoons. They can grasp objects, or the stems of plants. They are made to manipulate soft substances like beeswax.

The bee can make a hole in cloth or in paper, but an examination of the method used will show that they first take hold of a projecting thread and pull it out, then take another, and keep pulling till they change an apparently smooth piece of goods into a rag. But when it comes to the smooth skin of a fruit, all they do is to remove the soft down or bloom of the fruit, if they travel upon it long enough, but they are no more able to bite into it than a human being could bite into a smooth plaster wall.

This may be demonstrated by actual test. The most expeditious method is to place a bunch of ripe grapes inside of a populous hive of bees, previously puncturing a few of the berries, and taking note of it. After twenty-four hours or more, investigation will show that the bees have sucked the juice out of the punctured grapes, but have left the others intact. They will even go so far as to cover these with propolis, or bee glue, as they do with every foreign substance of which they cannot get rid.

Some persons assert that they are sure the bees injure fruit, because they have seen them at work upon it, and because large quantities of fruit, especially of grapes, have been found entirely destroyed where bees alone were found upon them. This is simply a delusion similar to that of the uninformed human being who denies that the earth turns around the sun because he sees the sun rise and set and does not feel the earth turn under his feet, and argues also that it would be impossible for him to live and hang on, when the earth was bottom side up.

The bee evidently works upon the damaged fruit, and feels so innocent about it that it does not even fly away when we catch it in the act.

But let us get up with the dawn, before sunrise, and go to the vineyard or to the peach orchards, and there we will catch the real culprits who damage sound fruit; quails, robins, catbirds, etc. They gather there by the hundreds, they eat their fill, and when no longer hungry, they find a pleasure in wantonly plunging their beaks into the soft fruit.

In many instances you will find a bunch of grapes with hardly a sound berry, and they are all plucked on the same side, many of the berries showing two holes, one above the other, a short distance apart. It was done by the two points of the bird's beak.

But the sun rises above the horizon, and the bees come to gather the fragments, and so does man, and he straightway puts the blame on the little industrious toiler who works from daylight till dark for its board and never fails to bring its harvest to the hive, to be later robbed by this complaining human miser.

Bees do not work at all times, even on unsound fruit. Is it because they are lazy at times? No! it is because they find something better.

Whenever you find the bees in damaged peaches or grapes, you may be sure that there is no honey to be found in the blossoms.

There are seasons of honey scarcity, when they manage to gather quite a supply of partly-fermented fruit juice. It is the best they can find, but it is not very good for them, for it will turn sour in the hive and make bad winter food.

The prudent apiarist removes all this unhealthy food from the hive before winter and gives them good honey instead. There is never any great quantity of fruit juice harvested, because in many cases the bees are made drunk by its fermentation and fail to reach the hive alive. So when bees are seen to feed numerously upon damaged fruit, it may be safely asserted that the apiary is more injured than benefited thereby.

I have shown that the damage caused by the bees is more imaginary than real. Let me now look upon the damage which has been occasionally inflicted to the bee by the horticulturist. It is done by injudicious spraying of fruit during the bloom.

Dealers in spraying instruments have formerly asserted that it was necessary to spray the fruit trees while they were in bloom. The result has been a wholesale poisoning of honey-gathering insects wherever this method was pursued; the poison in the spray mixed with the honey in the corolla has endangered not only the life of the insect that sipped any part of this liquid, but also the life of those who might eat of this honey in the comb. So the spraying of fruit in bloom may easily be made a criminal matter.

But is there any advantage in spraying fruit trees in bloom? What we seek to prevent is the puncturing of the fruit by the predatory insects, such as the codling moth, the curculio, etc.

These insects puncture the fruit only when it is formed, and their destruction must follow the formation of the fruit. The throwing of any poisonous mixture upon a blossom can have but one effect, that of distroying the efficiency of the pollen, if it becomes diluted in this poison.

The assertions which I have made in this paper are based upon positive facts I have been a beekeeper on a large scale for some forty years, and have grown peaches, apples and grapes also on a large scale. I have some twelve acres of vineyard in full bearing, and during the past summer also harvested, in partnership with my son-in-law, some 1200 baskets of fine peaches. I have often taken visitors into the vineyard and shown them without possibility of error that beekeeping and fruit-growing are not antagonistic, but are profitable when carried on, hand in hand, in a suitable location.—C. R. Davis.

Coulson's Special Dry Chick Food

Feed to Your Chicks

And See Them Grow

Advantages of Coulson's Ready Mixed Chick Feed

The proper feeding of poultry is without a doubt the most essential factor in the raising of any kind of poultry for profit. Considerable advancement in the feeding of poultry has been made in the past few years, especially in the feeding of little chicks.

Chicks should be given a feed that makes healthy, well developed bodies. COULSON'S SPECIAL DRY CHICK FEED contains the ingredients that are best adapted to give nourishment to the growing chicks: Sweet tender seeds, cracked grains, blown free from dust, cut oat meal, tiny pieces of cooked and dried meat, fine particles of fresh cut bone, charcoal, burnt bone, and other things.

It is clean, sweet feed that is easily digested, and chicks show increase in weight, strength and beauty when fed it exclusively. Little chicks need no other food for the first six weeks. You can feed your chicks entirely on COULSON'S SPECIAL DRY CHICK FEED the first six weeks, at a cost of about 4 cents apiece.

Ask your feed dealer about Coulson's special and be sure that he does not sell you something else.

If your dealer does not keep it, write us, and we will tell you where and how to get it.

To be able to raise the chicks that you hatch and have early broilers to SELL AT A HIGH PRICE; to raise NICE LARGE HEALTHY CHICKS; to have chicks that will stand on the floor and crow when six weeks old; to raise chicks that you will be proud of, feed

SPECIAL OFFER.

Where Coulson's Special Dry Chick Food cannot be obtained from local dealers, we will ship, freight prepaid to any railroad station in California, 100-lb. sack for $4.00 or 200 lbs. for $7.50, cash with the order.

Pullets Lay Early

"I have fed your Special Food and Growing Chick Food to all my stock with one exception. I tried one lot of 350, and fed them my way or raising chicks back East. Results just fair. The other were fed up to three months on your Special Chick Feed, and the results were a surprise to me. The birds were large and the cockerels out of one lot I sold to the California Market and got a big price, with the request to send on to them at any time I had more cockerels of the same quality." Respectfully, A. P. WARD, Calistoga.

Coulson Poultry & Stock Food Co., Petaluma, Cal. Milwaukee, Ore.

Gentlemen:—

While in the poultry business I have tried several brands of Chick Foods and find COULSON'S SPECIAL far superior to any other brand.

Yours truly,

(Signed.) Floyd W. Scott.

Coulson Poultry and Stock Food Company, Petaluma, California

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Plant of the Santa Ana Valley Irrigation Company

Sixty H. P. "Western" pumping 400 miners' inches with 5½ gallons of No. 2 distillate per hour; total lift 40 feet.
Only one of over 600 Western Engines doing phenomenal work in Southern California.
More Western Engines of 60 H. P. and over in use in Southern California than all other makes put together.

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And the factory at your door. Call and see us or send for new catalogue. Plants designed, constructed and installed.

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Farmer Smith's Gas Engine

Said Farmer Smith to Farmer Brown,
I think I'll hie myself to town,
And buy straightway a new machine,
To run my pump by gasoline.

So Farmer Smith he hit the pike,
And to the trolly-line did hike,
And quick as lightning in he came,
And landed saft at Sixth and Main.

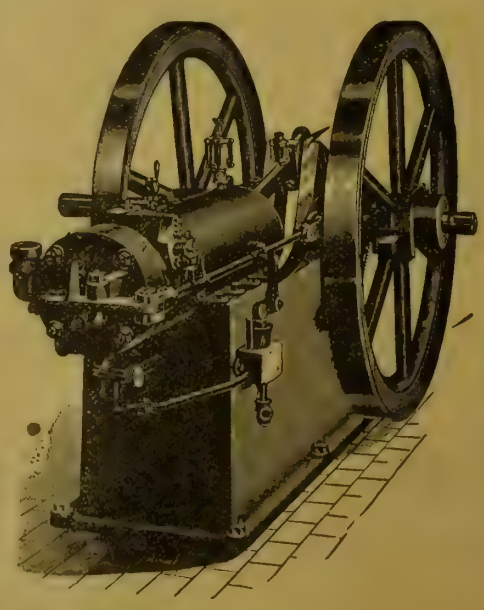
Of engine men he met a score,
They dogged his steps from door to door,
And every one was quick to swear,
That all but his would need repair.

But while he sought to find a "cinch,"
A salesman nailed him inch by inch,
And ere the day came to an end,
A new machine possessed our friend

But when at length it was installed,
Poor Smith was terribly appalled,
For when he saw all he must learn,
To make that engine do its turn.

Then Farmer Smith just cussed and swore,
And tramped the wheels 'till he was sore,
He fussed around from dawn 'till dark,
That blamed old thing refused to spark.

When quite discouraged with the strife,
A friend inspired new hope and life,
He said if you would be in clover,
Secure, like mine, the best, A STOVER.



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Live Stock and Dairy Edition

California Cultivator

Los Angeles March 28, 1907 San Francisco

Modern Stock Barn and Feed Yard

IN THE northern and central portions of California, the dairymen and feeders are building their barns with two objects in view: first, sanitary excellence; second, practical regulation of feeding bins and yard privileges.

Sanitary conditions properly come first, for it is a fact clearly demonstrated by experience, that cows will not do well in poorly ventilated barns, nor in confined places where the floor is continually wet and filthy. Cattle improve or decline according to their environment. Clean, open sheds, protected from rain, where the roof is of sufficient length to keep the floor dry, are best.

Yards constructed to permit of moderate exercise are also now used by dairymen; the reason assigned being, that the more exercise the animal takes, the greater will be the breaking up of the tissues of the body; and as this is the source from which the curd is derived, it follows that wide ranges are not conducive to the production of butter fat in milk, while clean yards, clean sheds, ample ventilation, and wholesome feed, bring best results.

The above illustration presents a modern stock barn and feed yard for a California dairy. It has ventilation, concrete floors in the barn, and a gravel base for the yard surrounding the barn. The space between feed bins may be filled with alfalfa or hay, which expedites feeding, or wagons may be drawn through the barn and the stock fed directly from them. The illustration represents the style of a popular barn being erected in many sections of the San Joaquin valley. H. V. Taylor of Corcoran has a number of them, or similar ones, and his stock always presents a healthy and animated appearance. The length of the barn commonly is 100 feet, the width 50 feet, with a 20-foot driveway in the center. The roof extends well down the sides so that no rain reaches the cows, and very litle wind comes through. The cement floor is sanitary, as water runs away behind the animals to a gutter under the eaves of the roof. Sanitation and ventilation are the primary conditions to be sought in the erection of cattle barns and yards.

Confident that a trial will convince any one of its superior merits, we will send to new customers one 25-lb.

$3.00 PAIL FOR $2.00

or one 50-lb. $5.75 double sack for $3.50, and will prepay the freight to any point west of the Rockies. Not more than 50 lbs. to each one, and we reserve the right to withdraw this offer without notice when we have received all the orders we care to fill at these very low prices.

We are presenting no cheap premiums nor offering any gaudily colored pictures, but are making this strictly legitimate business offer for the purpose of inducing many more to try WEST COAST STOCK FOOD. We thus hope to add to our large number of steady customers. We are charging up the difference and the freight to our advertising account feeling sure that a trial of the goods is the very best advertising.

There are no strings to this offer. Just send us your name, your post office address, the freight station to which you want the goods shipped, mention this paper, and we will do the rest. Send money order or check with your order, and if everything is not exactly as represented your money will be refunded. The First National Bank of this City, or Bradstreet's Agency, or any leading firm, can inform you as to our reliability.

West Coast Stock Food

Beyond Question the Best Condition Powder Made

Our Trade Mark

Long a Familiar Sight Hereabouts

A purely vegetable compound, very strong but harmless, and may be fed to calves, colts, lambs and pigs, without fear. It will make young stock grow and develop in a rapid yet natural way, while matured stock will maintain health and vigor by its regular use. It purifies the blood, tones up the system, acts on the digestive organs, enabling the animal to assimilate all of its food and convert the same into blood, bone, fat, sinew and muscle. Hence it is a great feed saver. It puts the system in proper shape to be sustained and developed in nature's own way. Its use avoids all tendency to tuberculosis. And besides being a general conditioner, this preparation is a cure for **Epizootic, Cough, Hidebound, Distemper, inflammation** of the **Stomach, Caked Udders,** and all sorts of **Colds,** etc. Specific directions in each package.

Your stock needs a condiment just as you need salt and pepper—they relish the food better and digest it better. Read what a leading professor in a prominent agricultural college, in a recent article on Stock Foods, says:

"They will always be found useful when properly made. The time will never come when intelligent feeders will cease to use them. The necessity for using them and the advantage therefrom will become greater as foods become increasingly dear. Whether it will be profitable to feed them will depend upon the necessity for using them and on their cost. My special desire, however, is to show that they have a place in the economy of intelligent feeding. The question of price must be fought out between buyer and seller."

The best is always the cheapest. A dollar's worth of **West Coast Stock Food** will go further and produce more and better results than will two dollar's worth of many so-called "stock foods" which contain a large amount of cheap filler. **West Coast Stock Food** is highly concentrated and therefore less needs to be used. Why buy stuff shipped over the Rockies at high freights, when better goods, better adapted to these west coast conditions, are made and sold right here at lower prices. **West Coast Stock Food** has been a standard preparation upon this west coast for many years. It is the result of long, careful, and intelligent experimenting and study on this west coast and under its peculiar conditions.

MERCEDES JULIP'S PIETERTJE, H. F. H. B. 39480.

This is a photo of a Holstein cow of international fame because of her marvelous recordas a butter producer. In seven days, in a Minnesota mid-winter,she made 584 lbs. of butter, thus becoming the **Official World's Champion.** She was then owned by the present**President** of the **West Coast Stock Food Company.** It wasonly by recognizing and applying the principles of feeding weare now seeking to emphasize that this remarkable record was possible. This cow was bought for $200 and in less than eighteen months she, her heifer and her bull calf were sold for $3700. It pays to take the best care of stock as well as to feed them intelligently.

West Coast Stock Food fed to **Horses** and **Mules** will make their coats smooth and glossy, impart a vigor and "go" which enables them to render more and better service. For **Cattle** it is unequaled; it promotes assimilation of all the foods they consume and hence a strong flow of pure blood. We cannot expect them to put fat on their backs and ribs or into their udders, or to produce large, strong, healthy calves, unless the system is kept in good condition. The judicious use of this great conditioner will do much toward making the business of **Sheep Raising** more profitable. It causes sheep to gain in flesh, and given to ewes for one month before lambing time will improve their condition and increase the flow of milk, so that the lambs will be much larger and better every way. And for **Hogs** it is equally valuable. Their digestive organs have been overtaxed for generations. This food aids their digestion, purifies the blood and supplies many of the lacking natural ingredients of a perfect ration. Try it with hogs and note how rapidly they grow.

But don't take our word alone for all this. Read what other have said.

We hate to put this picture in here, because it isn't a bit pretty, but we want to show you what this calf looked like at 11 months old, before it had been given any West Coast Stock Food, and then have you read what its owner, Mr. Langstaff, says:

West Coast Stock Food Company: Elsinore, Cal., May 2, 1904.

Dear Sirs:—I have been in the cattle business for a number of years, always weaning the calves and feeding them skim milk. It is hard to keep their bowels right. We had two or three, as we thought, very good remedies. Last fall we had two calves that we could not cure, but we kept them alive for several weeks with our remedies. An old friend called on me and seeing these calves, he advised me to try West Coast Stock Food. I did not think it worth while as they were lousy and their skins stiff and scabby. There is no doubt that they would have died in a few days. I am glad to say I tried the West Coast Stock Food. **One package saved the calves,** and they have improved ever since. I am feeding twenty-three at the present time. I keep the West Coast Stock Food on hand and feed it regularly, and they have not been bothered with scours. Our best investment is what we put into West Coast Stock Food. Respectfully.

LANGSTAFF & WALTERS.

A Few Out of Many:

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California Cultivator

Vol. XXVIII—No. 13 Los Angeles, California, Thursday, March 28, 1907 Subscription $1 a Year

Courtesy International Harvester Co.

Stock Raising in California

A General Resume of Conditions and Practices Conducive to Success on the Pacific Coast

By MINNA E. SHERMAM

CALIFORNIA possesses wealth in her great timber lands, fully as great a source of wealth in the mineral and oil-bearing strata. Hardly second are great stretches of land planted to orchards and vineyards, and side by side with the horticultural wealth, stands the stock raising interests of the state.

The Stockman's Domains.

The stockman is in some portions of the state giving place to the dairyman. A few years ago the leading cattleman of the San Joaquin valley made it his boast that his vacqueros could start from the ranch on the Mexican line and drive a bunch of steers to San Francisco and feed them every night on his own land.

It requires an intimate knowledge of the great valleys of California to realize the magnificent domains held by the cattle men. There are thousands of acres of land, not even irrigated, that merely wait the time when the population of the state will have increased, until the land becomes too valuable for irrigated farms, to be used to feed one beef on two acres.

Already the cattle men are planting alfalfa by the hundred acres to feed the cattle. The cows no longer walk miles to secure a full stomach during the summer time. Before alfalfa was planted the sun dried up native grasses and the heat rose up in dust spirals, while the cattle lowed longingly at the dim outlines of the mirage of a distant lake with wooded shores that lay low on the horizon.

Beef Cattle.

The beef herds of California today are grade cattle; the native cattle, or Spanish longhorns, are confined to the hill settlers, there to rustle a living on grass or by browsing over the low bushes. The great beef herds have been improved by the addition of high bred sires of Angus, Hereford, and Shorthorn breeds. While the feeding of the steers is often deficient, the blood tells in raising the standard of beef above that of the native bronco cow.

Horses.

The early importation of thoroughbred horses has stamped their marks on the driving horses. In the days before the coming of the trolley cars, the type of the thoroughbred was clearly seen in many of the small horses drawing the street cars. This early infusion of thoroughbred blood has given stamina and good bone to the common horse of the country. The famous stables of racing horses of Governor Stanford, Haggin and other magnates, cannot be more than mentioned here. In the days when Mr. Marvin was at Palo Alto, I was a frequent visitor, and knew personally many of the famous racers, seeing them begin in the kindergarten ring and develop into the full power of speed.

Draft Horse.

The lack of good roads and well paved streets in the cities, as well as the absence of manufacturing, kept back the breeding of heavy draft horses. During the past fifteen years there has been a remarkable growth, of towns into cities, and of villages into towns. Now there is an active demand for draft horses. The importation of draft stallions has become common; today ten or fifteen may be found where fifteen years ago one represented all the available stock within a farmer's reach.

Kern county has lead in the raising of heavy horses; the buyers taking carloads of large horses to the town for use of the draymen. Here the San Francisco Fire Department has purchased many useful horses. San Francisco has lately been drawing heavily on the San Joaquin valley for large horses. The available supply of geldings is now limited, and far too many mares are being taken away from the breeding strings of the farmer to do draft work; these are lost as producers in the turmoils of rebuilding San Francisco.

The Plains.

The heavy horse is naturally found on the plains or in the wide valleys. In California there is a popular notion that the hill horse has better

Martha Washington.

The illustration herewith given is a grade Jersey cow. The record made in five months, from calving, was 48 pounds of milk per day. She has a test of 20 pounds at one milking of 5.2. While this performance is exceptional, there are many examples of a somewhat lower test made by grade Jerseys throughout the state,

feet and is hardier than those raised in the valleys. While this may be so in the driving and saddle horses, yet the heavy horse succeeds best on the plains.

The Arab is a horse of the plains also; from him comes the thoroughbred. With perhaps, the one exception of the Morgan horse of New England, the best strains of horse flesh come from the plains. The Morgan horse, like other hill-bred animals, lost in size. There may have been lack of wisdom in the breeders to control this decline, and today the best of the blood has been infused into the standard-bred trotters.

The Morgan horse of today is a different animal from the enduring kindly Morgan animal of thirty years ago. His Arab-like fondness for his master, and for the children, that made him a docile pet, yet mighty to go on the road,—has been lost in the shuffle of making a racer out of the best family horse the country ever produced.

Dairy Cattle.

The breeding of blooded cattle by the dairyman has developed within the past twenty years. The improved blood was first introduced to increase the butter fat contents of the milk and to increase the daily milk yield. The introduction of the dairy sire too often, when bred to cows of beef strain with improved feeding, at first produced a loss. The richer foods made many cows put the fat onto their backs. The beef blood was still too strong an infusion.

This was for a time a source of great discontent with the purchasing of fine dairy sires. The dairyman wished to increase the daily output of milk and raise beef at the same time. He failed, and had only himself to blame, for he selected as dams his best beef cows. The cows that looked best to him, and his ideals of a cow, were along beef lines, so he selected his best beef cows as dairy dams.

Their pretty rounded sides and easy keeping qualities, appealed to him as desirable. Later came the knowledge that the dual-purpose cow did not exist, and that the milk a cow gave was of more value than her carcass could be for beef.

Gradually the lean cow or "widows," as the stock boys call them, were found to be the most profitable cows in the bunch. That reminds me of a story; maybe you have all heard it? The preacher read from the Bible the description of the lean kine of the seven year's famine; it caught the ear of a sleepy dairyman as he dozed in his pew, one warm Sunday morning; up he jumps and startles the congregation from its napping by shouting, "Say who's selling? I'll take the bunch." It has been suggested these lean cows that swallowed the fat kine were the ancestors of Governor Hoard's type of dairy cow.

Registered Cattle.

The full blooded herds of dairy cows in California are usually Jersey or Holstein-Friesian. There are a few Ayrshire and Guernseys, and one of two small herds of Brown Swiss, that make the fancy herds of the state. The common herds are bred up from the Shorthorn base by use of a dairy sire of one of the established butter breeds.

The distribution of the breeds has been governed largely by the character of the land and the natural foods produced. Individual fancy often brings a race of cattle into unsuitable environments, they fail to prove profitable and pass to more congenial conditions.

The natural herbage of the coast, supplemented with rye grass, supplies the pasture; here the Jersey and Guernsey find a home. The Ayrshire is also a hill cow and can run up a steep hill like a deer, never halting until the highest point is reached. The Holstein and Shorthorn are at home on the plains, in alfalfa field and on salt and Bermuda grass.

Alfalfa.

In the legume family, of which alfalfa is one, the protein is large, making it a nitrogenous food, similar to meat for the human family. The chemical analysis shows it to be the equal of bran in protein, a little less in carbohydrates.

Now protein is the expensive part of food, and to have a natural food, that is full of it, is a blessing. Many eastern feeders have been claiming that to class alfalfa with bran was giving it too high a value. Alfalfa meal has been a disappointment to the dairyman; the poultry feeders speak highly of it, however.

Alfalfa that grows without having rain fall on it, cured in the snock and cut while juicy, retains its leaves cured, not dried up; in other words, cow hay; makes it perfect and different from the reedy, sunburnt stuff that is sold for alfalfa hay.

I have for years subsituted chopped alfalfa hay in the cow ration to take the place of bran whenever the bran becomes too high or the price of butter fat drops down. The cows have held up in their milk steadily when the change was made slowly and carefully.

Every change that comes in a cow's diet should be made slowly or they will eat the new mixture with a rush, and have indigestion. Bran has

Continued on Page 358

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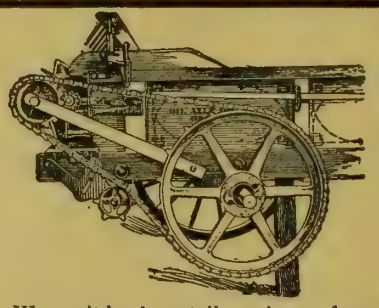

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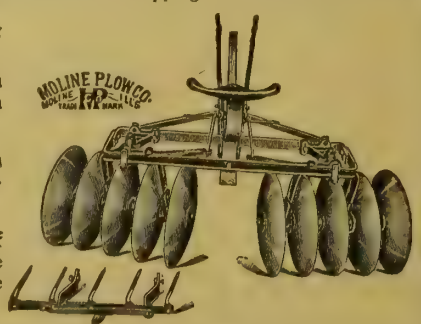

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Deciduous Fruit Culture

By J. W. MILLS

CARE OF YOUNG TREES.

THOUSANDS of young trees will be planted this spring and peaches will perhaps constitute the largest percentage of any variety planted. Peach trees are very apt to sunburn if not properly protected from the sun the first year. When a young tree especially, becomes sunburned at any part, it is a sure thing that it will be attacked by borers almost if not at once. When once they enter the bark, they are apt to go clear in and do much damage before they are noticed.

Borers will not attack healthy wood. (We refer to borers that burrow above ground in the stems and branches. If the bark is kept in a healthy condition, there need be no trouble from this insect. We have killed a numerous crop of these borers in Bartlett pear trees, even after the worms had entered the bark, but it is not safe to allow them to go that far.

It used to be a common practice to wrap the trees with old sacks till the stems had grown a rough bark, leaving the sack to rot off. This is a good thing to do, but whitewashing is cheaper and just as effective. A little sulphur added to the lime, say a handful to a 3-gallon pail and the same amount of salt, will make a whitewash that will stick. The sulphur will be distasteful to any insect, though the object in using the whitewash is to prevent sunburn. If there is no sunburn there will be no limb or trunk borers.

Mr. J. B. Neff, of Anaheim, uses a whitewash for general purposes that sticks about as tight as paint. He mixes lime with cactus juice instead of water and salt.

Should borers succeed in hatching on the trees, they will easily be detected by a small irregular mark just beneath the bark on the sunny side of the tree. By lifting the thin outer bark, the small worm will be seen, not much bigger than a hair. In such a case, it is time to act at once. Often soft soap made from yellow bar soap and thinned down to the consistency of thin cream and apply with a brush and cover this with anything, paper that is not black or old sacks, and the worms will never do any harm. This is not theory, but has been done repeatedly on a large scale and with entire success.

LEAVES AS FERTILIZER.

Leaves are nature's fertilizer. Some one, in speaking of the importance and usefulness of leaves, said that they were the lungs of the trees and plants. It is certain that vegetation is fed, nourished and sustained by the elements contained in the atmosphere as well as by those of the soil. Therefore the leaves of each tree or plant possess the elements obtained from the air and earth particularly adapted to the sustaining and nourishing of its own peculiar life.

How often have we heard the expression, "I dislike autumn, for the leaves are falling—they are dying." To some the fall of the year brings unpleasant memories, as probably this is the season of the year when their loved ones passed away; but the falling of the leaves should not be a sad sight, but a gladsome one; because they are simply passing from one state of usefulness to that of another. They are doubly useful; they protect the roots from the severe cold and the injury of the frequent freezing and thawing of the ground, and while thus employed they are decomposing, and the rich properties that they gathered from the air and soil enter into the earth and are absorbed by the roots, and thus leaves live again.

Tobacco leaves pulverized and sprinkled on the top of the soil of potted plants not only furnish food for the plants, but are also a preventive against those little white worms which are so troublesome and destructive to plants. Everyone who cultivates house plants knows that in order to keep the plants growing and blooming nicely the seed pods should be removed as soon as the flowers fade, and the leaves removed as soon as they begin to die or turn yellow. Instead of throwing these leaves and pods away, as is the usual practice, press them into the soil containing the plant from which they have been removed. Plants treated in this way seldom need to have their soil replenished.

FRUIT AND FROST.

The recent cold weather has killed a great many fruit blossoms that gave promise of making fruit. It is not at all certain that this is true in every case where even the entire crop has disappeared. It has been the experience of many growers that certain varieties of peaches, for instance, have passed through frosts that have killed the fruit of all other varieties. This has occurred under our observation with Levy's Cling and Salway peaches. These trees bear continually under the most trying circumstances. It would seem that frost would have the same effect on the embryo peaches of these varieties as it has on the others, but the vigor of them seems to come into play against the frost. If these are facts, then how do we know but that the frost is not altogether to blame. Trees that are constantly kept in a thrifty condition have the maximum periods in which to store up food material. This is the reserve force that resists the elements and natural enemies of the various fruits. Certain varieties are minus these qualities to a certain extent and therefore cannot be relied on. Persons having locations that are subject to severe frosts at critical times in the life of the fruit crops, should select varieties that are naturally hardy in every respect. These remarks have special bearing on selecting for the home use. We know of home orchards that are sometimes without certain fruits on the account of the late frosts. There are varieties that will stand in such places.

TIME TO GRAFT.

It is now time to get grafts into plum, pear and apple trees. It is too late for peaches and apricots. Except where branches are over two inches in diameter, splitting the stump is a good way, but for branches larger, the saw graft is best. This is made by sawing across the corner of the stump so that the saw cut will extend down the side. Trim out with a grafting knife, so that the top of the groove will be wider than the bottom and press the scion down from above. Wax with a brush, wrap with cloth and wax over this. Do not use a scion larger than a lead pencil nor one with less than two buds nor longer than three inches.

CALIFORNIA TUSSOCK MOTH.

As this caterpillar is a native of California, we might expect it to have parasitic and predaceous insect enemies, as well as diseases.

Some experiments were undertaken with the idea of determining these as far as possible. The method of procedure was to collect specimens in the field at various dates and stages of development and keep them for the remainder of their period of development in muslin-bag cages tied over apple branches. It was thought that this would prevent any infestation by parasites after the date of collection.

There were in all fifteen of these experiments, the dates of collection ranging from March 24 to April 26. The data obtained are embodied in the table below, from which it will be seen that no parasitization occurred until April 11. All the collections made after that date contained parasitized larvae.

The only parasites obtained in these experiments were Tachina flies. These parasitic flies resemble in general appearance the house fly, but most of them are larger.

In addition to the collection of larvae, a number of collections were made after spinning-up had occurred. These were kept in paper bags in the laboratory. All the pupa collections showed a liberal percentage of parasitization, in some cases as high as fifty per cent. The majority of the parasites taken were the same kind of Tachina flies obtained from larvae, but the pupa collections also showed several species of Ichneumon flies and other parasitic wasps.

There is also a Chalcid parasite which develops in the larvae and kills them before they reach the spinning-up stage. In this case the parasitized caterpillar remains fastened to the leaf or twig on which it dies and the adult larvae of the parasite emerge from the caterpillar and pupate in a row on each side of the paras pate in a row on each side of the parasitized insect. Twenty to thirty parasites develop from a single larva

There is but little evidence of predaceous insect attack on this caterpillar or of it serving to any extent as food for birds.

The eggs are attacked by a minute hymenopterous parasite (Telenomus orgyiae Ash). This looks like a very small gnat, and is found crawling over the egg masses. The larvae of this parasite develop within the egg of the tussock-moth and begin to emerge early in the spring. The emergence of the parasite continues, however, until after new egg masses have been deposited.

The egg masses are also attacked by the larvae of a Dermestid beetle. This larva is brownish-colored and covered with long hairs; it is able to crawl rather rapidly, but may remain still if disturbed.

The egg parasite and the Dermestid beetle are the most useful parasites of the tussock-moth, as, by attacking the eggs, they prevent the caterpillars from hatching, the efficiency depending on the abundance of the parasitization. The other parasites attack the larvae only after they have developed and completed their injurious attacks on the fruit and leaves.

While parasites have been very abundant they have not destroyed more than fifty per cent. of the caterpillars, many moths having emerged and deposited their egg masses. So, if the egg parasite and Dermestid beetle do not become much more abundant, or some other cause of death intervene, there will be a liberal infestation of the orchards again next season.

Diseases were scarcely at all in evidence among the larvae. A few larvae died early in April, apparently from a bacterial disease, but caterpillars forced to feed on leaves wet with water containing an infusion of the dead bodies did not result in infection. Three of these experments were tried.

DEPTH OF DEATH VALLEY.

The United States Geological Survey has just completed a line of spirit levels through Death Valley, California, and much to the surprise of everyone familiar with the region has ascertained that the depth of that area is not so great as was supposed. The final computations of the results have not yet been made, but the preliminary figures give for the lowest point a depth of 276 feet below sea level. Bennett's Well, which is near this point, is 266 feet below sea level. These figures may be altered by two or three feet, when the final computations are made, but they are probably not more than three feet in error. The Geological Survey now has elevation marks on the highest and lowest points of dry land in the United States.

It is a strange coincidence that these two extremes are both in Southern California and only 75 miles apart. Mount Whitney is a foot or two over 14,500 feet above sea level, while Death Valley, as above stated, is 276 feet below. Before the Salton sink, also in Southern California, was flooded by the Colorado river, it contained, the lowest point of dry land in the United States, a spot 287 feet below sea level.

Previous estimates of the depth of Death valley based on barometer readings gave for the lowest point figures varying from 250 to 450 feet below sea level. The level line of the Geological Survay is believed to be the first accurate determination of elevations in that locality that has ever been made.

TEST FOR MUSHROOMS.

The popular idea is that most fungi are poisonous. The truth is the exact opposite. Those that are poisonous contain a principle known as "muscarine," which is practically identical with the poisonous property in decayed meat. The popular test of peeling is not a reliable one, for some poisonous sorts peel readily. Nor is appearance a guide, for the ugly greenish-yellow Boletus Edulis, which most people would shy at, is excellent.

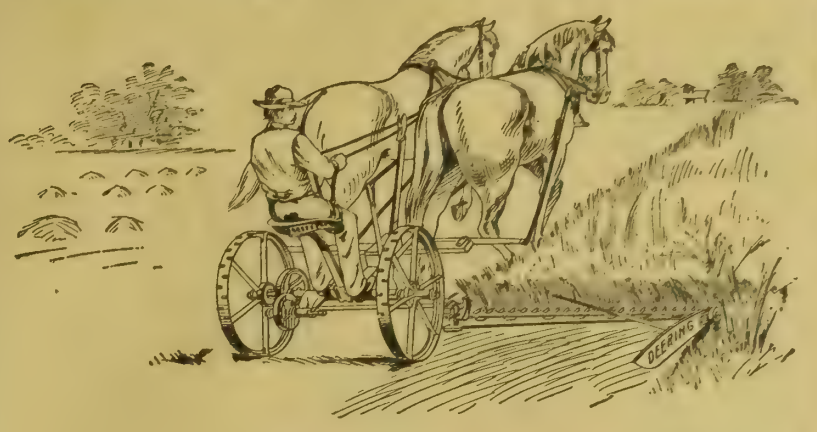
Practically, all those which become brownish, greenish or bluish when cut and exposed to the air are unwholesome.

There is more than one kind of edible mushroom besides the Agaricus Campestris or meadow mushroom. The St. George's mushroom, found in May, is good eating; so are the parasol mushroom and the scaly mushroom.

The giant puffball, which is white all the way through, forms an excellent dish when delicately fried; and the beefsteak fungus which grows on trees is almost as good as the meat from which it takes its name.

To the trade there are three sorts of mushrooms known—namely, "buttons," "cups," and "broilers." France is the cheif center of mushroom culture, the annual crop of mushrooms grown there being worth over $2,000,000.

Deering Ideal Mower



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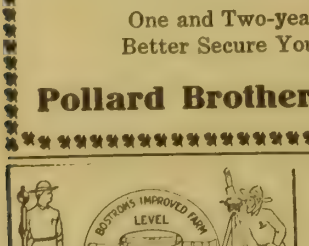

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With the Citrus Growers

By J. W. MILLS

PACIFIC COAST FERTILIZERS.

IN THE past, the great bulk of fertilizers used on the Pacific Coast, have been imported from foreign parts or for a considerable distance east of the Rocky mountains. This will no doubt continue for a great many years, and it is doubtful if we ever can find a supply of potash in large and concentrated form. It is a fact that our soils are rich in potash, but it is also true that the plants cannot always get it in sufficient quantities to supply their needs. Is it possible for the fruit growers, and especially the orange growers of California, to dispense with the importation of commercial fertilizers? Theoretically it is. If such is the case in a practical way, and if the growers work out the problem, will they not stand at the head of their class in scientific farming and fruit growing? And above all, does not the mention of such an idea smack of much self-assurance, not to say irrational thinking? We think it does, but there is one thing sure, we have not many years left in which we can draw on the nitrate beds of Chili, for the firms who control them say that the visible supply will be exhausted in fifty years. The principle source of our potash is from the sulphate beds of Germany, situated many hundred feet below the surface of the ground, and there is nothing so uncertain as buried treasures. When the lead runs out, that is the end to that particular deposit.

Our chief source of supply of phosphoric acid has been from the natural rocks of the country contiguous to the Atlantic coast. This requires a long haul that means a high freight charge and is prohibitive, except when reduced to the double phosphate form. It is seen by this, that with the exception of a small amount of the three fertilizing elements that we need to add to our soils for quick results, we have to deliver by long hauls.

It would seem that the farmers of California would have to resort to some magic means to get these high-priced materials from their own territory, or else continue to pay high prices. There seem to be opportunities to relieve this condition. The copper companies of the west have a surplus by-product sulphuric acid, and in an endeavor to utilize this, they have explored some of the Pacific islands and found rock prosphate in abundance. This they have attempted to put on the California market as a super-phosphate after having treated it with acid, and just what the result will be has not yet been determined. At any rate it is a phosphate close to home. That may settle the phosphate question, but we have no potash deposits that we know of, except the relatively small amounts that are distributed in the soil, but which have so far proved inavailable to plant life in most cases. If it is not available and cannot be made so, it might as well not be there. The problem is to make it available. If it can be done, the potash problem will be solved for generations to come. The key to the problem in all probabilities is in the hands of the farmer. Striking instances have been related where analyses of the soil have shown that barren clay soil in which no profitable crop could ever be persuaded to grow, contained more plant food than rich garden loam that produced abundant crops year after year. Why do these apparently queer contrasts exist? It is simply a question of humus. We know what humus is or what it comes from, and we know that fully half of the available plant feed in any soil is found in the humus. Take a soil rich in humus and when the latter is separated from it a very small fraction of the bulk of the soil has been taken. The humus from a bushel of rich soil will contain perhaps not enough to fill an egg shell. Its power lies in making the elements available and in it we have a valuable servant. This brings into an available form the dormant potash and phosphoric acid. We can make it mine our potash for us, distribute it and pay the freight for us.

This latter proposition is a partially theoretical one. We do not know how much of the potash it will find for us. It cannot create it for us as far as we know. That would be contrary to all present knowledge. If it can find enough for our use as we go along, we can dismiss the question of the future supply of potash. There still remains the question of our supply of nitrogen.

We know that four-fifths of our atmosphere is nitrogen, but it is hard to get hold of and hard to keep. We are all familar with the fact that legumes take nitrogen from the atmosphere and add it to the soil, thus giving us a sure and large supply of this element. Nature lends us a helping hand here again and it remained for science to show us how to take it from the atmosphere in a definite chemical form. This has recently been done in a manner which makes it a commercial proposition.

All of these facts point to the possibility of our some time supplying ourselves with the expensive elements needed in agriculture, by reaching into Nature's storehouse that surrounds us continually, and helping ourselves. Nature has so arranged it, however, that we cannot take them to the exclusion of our neighbors.

NEW ORANGE BOX.

H. P. D. Kingsburg and William Hinckle were here from Redlands last week, says the Riverside Enterprise in the interest of the new orange box to be manufactured at Redlands and other points in Southern California. The box was investigated by packers and all who saw it were enthusiastic over its possibilities.

The new box is manufactured at a mill in Wisconsin owned by the Pacific Packers' Supply Company, the name of the corporation that will make the new box. It is a standard size box, the distinguishing feature of which is its material. It is manufactured of material called rawhide wood pulp which is peculiarly tough and resilient.

The four sides of the box are composed of one piece of this pulp board held in place by reinforced cleats secured by galvanized iron clamps. Many points of advantage are claimed over the old wooden orange box among them being that there is enough "give" in the material to prevent the fruit crushing, and the fact that there are no sharp edges to cut the fruit.

Both sides can be ventilated by holes perforating the pulp board of the box and be made nearly air tight. The box is practically indestructible and can be used for other purposes after it has done service for oranges. When packed either on the sides or ends in a car there is perfect ventilation, and the loss of fruit from decay would be considerably lessened.

The box weights two pounds less than the wooden orange box, and seven boxes more to the car could be loaded. This would be a saving in freight on the California orange crop of 25,000 carloads, or $166,000.

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California Horticulturally

By JOHN ISAAC, Sacramento, California

THE IRRIGATION CONGRESS

THE National Irrigation Congress will hold its next annual convention in Sacramento in September next, and arrangements are already under way for making it the greatest convention of that body ever held, as it will be the most inmportant. Irrigation in the Sacramento valley has taken wonderful strides in the past few years, and upon it depends largely the future prosperity of that valley. The great wheat ranches of the early days have been worked to death by successive cropping, until today wheat growing can only be carried on at a loss. Wheat is the one crop which could be grown without irrigation, and with its decline these great ranches must be cut up and put under irrigating water or lie idle and be a constant loss to their owners. These are facts which have been brought sharply home to that section and stronger efforts are being made to get water on these lands and offer inducements for settlement. In view of this fact it will be seen that Sacramento has a special interest in the coming convention, and that no effort will be left untried to add to its success. All California is also interested and, perhaps, to a greater extent the whole arid west, as California is the exemplar along these lines and other sections come to us to learn our methods, and when their delegates meet in our capitol city, they will have many object lessons before them and will be within easy reach of the great irrigated area of Southern California, in which irrigation has reached its perfection.

RICE FARMING.

Experiments have been made several times in the past in the line of rice growing in the San Joaquin valley and along the San Joaquin river. None of these have been successful for some reason, either lack of knowledge on the part of the experimenters or unsuitable conditions, but there is no doubt that soil, climate, moisture and conditions along the San Joaquin river are as suitable for this cereal as the higher lands of the same region are for other cereals. K. Ohashi, who has extensive rice plantations in Louisiana, has taken up the work here, and will start an experimental farm of 160 acres. If this is successful then thousands of acres will be put out to this useful grain.

DRY FARMING.

Colorado, Utah and other states in the arid region are giving much attention to what they call "dry farming," and a convention was recently held at Denver to discuss its advantages. Dry farming has been in vogue in California for many years, and consists of deep plowing in the fall and leaving the land in such condition that all the winter rainfalls will be absorbed by the ground, instead of running off, followed by thorough cultivation in the spring and the keeping of the surface thoroughly pulverized. By this means the surface soil acts as a mulch and prevents the escape of the soil moisture, which is so conserved for the crops which may be planted. This has been pracically the plan followed in many sections of California with great success, and is not new with us, although it is only in the past few years that it has been discovered in Colorado. It is the plan applied to all our orchards, and many of our vegetable crops are produced in the summer with no other moisture than that which falls during the winter months.

HORTICULTURAL INSPECTORS.

The bill introduced into the Assembly by P. F. Cogswell, of Los Angeles, increasing the per diem of Horticultural Inspectors from $2.50 to $3.00 per day, has passed both houses and is now in the hands of the governor, by whom it will probably be signed, as it is a fair bill, and gives a very important body of our horticultural guardians a slight advance over the pittance they have received in the past.

WAGES FOR JAPS.

As a rule the gruit growers prefer white labor in the orchards as they get more work done and in a better manner, and can afford to pay good wages. When they are compelled to hire Japs during the scarcity of labor or in the rush of the season they find that the little brown men are constantly demanding more wages and endeavoring to get the same by playing one grower against the other or misrepresenting what each grower is paying.

This season the growers have decided to stand together upon the Jap question and have signed an agreement not to pay over 12½c per hour and the Japs board themselves. Should it be necessary to make other arrangements a meeting of the growers will be called to attend to such matter. This has nothing to do with the wage rate for white labor. Those who signed the agreement are: J. B. Wilkie, B. F. Walton, H. H. Wolfskill, L. H. Woodworth, Dr. Jackson, R. C. Kells, F. Hauss, R. N. Kells, N. Robinson & Son, E. T. Barrett, Edwin Winship, M. S. Peters, Peri Montna, Robt. Keck, A. Bauer, J. A. Littlejohn, J. N. Brandstatt, A. G. Bremer, George Walton, Jr., A. F. Bradford, J. A. Ashley, E. Graham, Thomas E. Holmes, R. T. Hoon, Lloyd Wilbur, E. B. Starr, W. R. Carpenter, E. S. Moors, J. L. Duncan, Grant Bros., C. G. Best, H. G. Littlejohn.—Sutter County Farmer.

DEFINITION OF A BOOSTER.

The following has been handed the Review by "one of them:"

"A booster is one that is for his town, when right; and when wrong, helps to right it.

"He asks for no special privileges to the detriment of the whole citizenship.

"He asks for a square deal for the whole city, and, when he cannot get it, kicks like a bay steer.

"He has a good word for every man, and every just and honorable enterprise.

"He lauds the citizens of his town, and its great advantages, and can see more good than bad.

"He kicks against city extravagances, but pleads for just expenditures.

"He glories in everything that will spread the fame of his city, and is ever ready to extend the glad hand to all newcomers.

"In fact, a real, genuine 'booster' is a man who loves justice, loves his city, loves her institutions, and is ever ready to put her interests before selfish schemes of all kinds."—Redlands Facts.

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A Plan for the Improvement of Cattle

By E. S. SHAW, of the Live Stock Experiment Station, Michigan

THE chief fault of the common cattle found today is their lack of quality and uniformity; this is not due so much to the lack of infusion of good blood as to the indiscriminate admixture of blood of breeds of both beef and dairy types. It is not necessary for us to attempt to present and establish proof of this assertion, as every live-stock producer can secure abundant evidence for himself in a short time, by simply exercising the faculty of observation. In traveling about by wagon-road or rail, note the number of animals in each herd seen, also the variation in type, form, and more particularly, color. Except for the herds of the few growers of pure-bred, or high-grade cattle, the common bunches will be found to include a great variety of color and types. In some herds red, white, black, brindle, and all conceivable combinations of these colors are to be found; at the same time some individuals will conform in a measure to strictly beef form, others quite markedly to dairy form, with all gradations, between these two. The indications of blood, as seen in color, will undoubtedly attract the attention of the casual observer more readily than other features. In other words, the presence and admixture of so many colors in common herds indicates that Shorthorn, Holstein, Jersey, and, less frequently, Hereford and Ayrshire blood has been freely admixed. The seriousness of this lack of uniformity in breeding, quality, color, form, etc., is not fully appreciated. For the past ten or twelve years, with one or two exceptions, the Chicago market has been topped by a certain breed of cattle sold in car-load lots. The reasons for this are found in the word uniformity. They have been uniform in size, color, form, finish and quality; in fact, as much alike as so many peas; you see one and you see them all. This prime requisite of uniformity can never be secured through mixed breeding.

Causes of Lack of Breeding.

The indiscriminate admixture of the blood of the various breeds has been one of the most direct causes of the production of inferior stocks. This has not been restricted to the breeds within the beef and dairy classes, but includes admixture of the blood of the two classes. With the rise in prices of dairy products, the common cows have been bred to dairy bulls; with depreciated values for dairy products, these same cows and their female progeny have been bred back to beef sires, and so on. On the other hand, there are plenty of instances where herds possessed of cows of a small type, producing a small flow of rich milk, have been bred to a bull of a larger breed noted for heavy milk flow, and vice versa. There are too many animals in our yards today saved from bulls bred to females for no other purpose than to "freshen them again."

Another potent force tending toward the production of inferior cattle is found in the too prevalent use of grade and scrub bulls.

Improvement not Difficult.

Questions of breeding are generally regarded as being obscure, intricate and extremely difficult, except to those skilled in the art through long years of training. It is true that we are obliged to look back upon the achievements of the "master breeders" of history with feelings akin to reverence, for their tasks of type-founding were difficult, requiring a whole lifetime in some instances to gain the mastery, and in others two whole generations to attain the highest success. But the initial step in live-stock breeding for improvement confronting us today, is an exceedingly simple one; we do not need to undertake the establishment of new types or breeds, as there are plenty now in existence to choose from, whi h, judiciously

A Jersey cow of superior excellence is shown in the above cut. She is the property of L. Bradbury, Duarte.

chosen, will respond favorably to the conditions to which they are adapted. The first step in the line of live-stock improvement must come from the cessation of the practice of admixing the blood of the various breeds, and of using grade and scrub sires.

Plan for Live-Stock Improvement.

Before introducing the plan of live-stock improvement, known as up-grading, we wish to state that it should be the ambition of every man owning live stock to eventually get into some line of pure-bred live-stock breeding. The plan we have to suggest and discuss for the improvement of the common stocks of the country, is that known as up-grading, which consists in ingrafting the characteristics of a superior breed upon animals of common or mixed breeding for the purpose of improving them. This improvement is due to the superior quality of the males used, and chiefly their prepotency, or power, of transmitting accurately these qualities to their offspring. This plan differs from cross-breeding, in that pure blood is used on the sire's side, and females of mixed blood, or no blood, on the dam's side. Thus we have the prepotency concentrated in the bull and the very opposite in the females; as the more mixed the breeding, the less stable are the inherent characteristics of the individual, and therefore the less resistant to improvement. It would be absolutely impractical to advise all owners of common cattle to send their stocks to the block and purchase pure-bred foundation stocks; only a few could do this for the following reasons: First, if the great majority now possessed of common stocks were to simultaneosuly seek to purchase pure-bred foundation stocks, they could not get them; they are not in existence, for only about one per cent of the cattle in the United States are possessed of pedigrees. Second, the finances of a great many holders of common stock are not such as to allow them to make extensive purchases of pedigreed animals, and replacement is out of the question, as it would require the returns from the sale of three or four common animals to purchase one pedigreed one. Third, it is highly desirable for breeders to grow into any line of pure breeding rath r than to buy into it suddenly, and take up a work in which experience is necessary.

Use of the Animals at Hand.

In general, then, it is necessary for the majority of holders of common stock to make the best use of the animals on hand, with a view to improving them. Let us suppose the case of a herd of common or mixed cattle of, say, eighteen head, and apply a plan of improvement. The first thing for the owner of this herd to do, is to decide upon some one line of production, either beef or dairy, and then stand by the resolution. Without this he cannot improve his herd, for the animals of mixed breeding are largely the result of frequent change of purpose. Suppose in this case, that the owner has decided to go into the dairy business; that being the case, the next thing to do will be to look over the herd of eighteen and decide which ones are so possessed of dairy type and characteristics, as to warrant their being used in the business. They can be divided into three classes, such as best, medium and inferior, from a dairy standpoint. Then, in the majority of cases, it will be found to be a decided advantage to send the six inferior ones to the block and use the remaining twelve for the foundation herd. Having selected the females to be retained, the next and one of the most important steps is to decide upon the breed to be used in improvement. In this, adaptability of the breed to the conditions, and the question of personal preference, are the two important factors; the decision of this question is also an important factor, for a change of mind after the work has begun, and the use of other blood, is more apt to result in retrogression for a time, than improvement. Having decided upon the breed to be used for improvement, suppose it is the Holstein, then purchase the best Holstein bull that the pocketbook will allow. Mate this bull with the twelve selected cows, and use him two seasons, after which his progency will be old enough to breed. At this point secure another Holstein bull, a better one than the first if possible; follow him with others of the same breed, indefinitely. Let it be Holstein bull after Holstein bull, nothing but Holstein bulls. We have cited the Holstein merely for the purpose of this illustration. The same plan must be used, no matter what the breed is.

The Grade Sire.

Attention has been directed to the fact that high-grade animals may be eventually produced capable of equaling those of the pure-breed used in their improvement, insofar as meat or milk production are concerned, but at the same time they can never equal them in prepotency nor become possessed of pedigrees, except in rare instances. So far as external form and indications of quality are concerned, a high-grade sire may look equally as good as a pure-bred one, and still this is no justification for his use. Though an animal may be an exceptionally

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good individual, if he is lacking in prepotency, as the grade derived from mixed blood on the dam's side is sure to be, his offspring cannot equal those of the pure male. And so in actual practice, except in rare instances, grade sires fail to produce offspring possessed of the marked uniformity and quality of those from the pure-bred male. We call attention just here to the fact that the quality of prepotency more markedly manifest in the breeds of most ancient origin has been developed through centuries; we must not expect to develop it in high grades in one decade. It would be useless to say that no grade sires should be used at all, for if 27,800 bulls are needed in Michigan, as indicated by the last state census, only a portion of this number could possibly be made up of pure-breds, as they are not to be had. Therefore, the only rational thing to advocate is the utilization of all pure-bred bulls to their fullest extent, the use of the fewest possible high-grade sires for the present, the use of the best of this class and the replacement of these by pedigreed animals as rapidly as possible. Occasionally, in purchasing, a man hesitates between two sires, the one a grade, the other a pure-bred; the former perhaps about as good as the latter in individuality, judging from appearances. On this basis, the purchaser secures the grade because it is at least one-half cheaper, but in considering the final results we should not lose sight of the fact that the superiority of a crop of ten calves from a pure-bred sire is almost sure to be so much greater than the same number from a high-grade, that the difference in the purchase price of the two sires may be more than made up in a single season.

Evil Effects of Breeding Immature Females.

During the past decade or two there has been a growing tendency to breed heifers at an early age; this is particularly true among the dairy breeds. The men who advocate and practice the breeding of heifers so as to produce calves under or at about 20 months of age, are extremely numerous. In fact, the practice has been carried to such an extreme that in many localities mature cows of some of the dairy breeds cannot be found bearing the same size that these types did twenty years ago. This practice is supported chiefly on the following grounds, viz.: First, that the earlier a heifer is made to produce, the sooner she begins to make some financial return for her keep, and second, the capabilities of the dairy cow can be increased if stimulated at an early age. There are those who claim not to object to lack of size in dairy cows, and also that the smaller cows are more profitable, but this latter claim has not yet been proven. The relative value of small versus large dairy cows as economic producers has not been determined, though much discussed. It is a notable fact, however, that the world's record-makers and the majority of the cows entered in the various advanced registry associations, are, in general, considerably above the average as to size. It is also a notable fact that the twenty-five Jersey cows entered in the dairy-cow demonstration at St. Louis in 1904 were large cows, the average weight for the twenty-five at the beginning of the test was 911.2 pounds, and at the close 983 pounds. These figures place them considerably above the average of the cows of this breed in general use in many dairy sections today These cows were used in a test where comparative economic production was one of the main features. Some expert dairy-breeders are inclined more and more to the belief that heifers should be allowed greater maturity before dropping the first calves, and are also permitting them to lay on more flesh than has been thought to be safe; these men are demonstrating the accuracy of their theories in the results produced. While it is clearly apparent that immature breeding has reduced the size of many of our dairy-cattle, it has not been proven that diminished constitutional vigor has accompanied this loss of size, though many hold to that view. It is rational to assume that in unduly immature breeding some of the physiological laws of nature must be violated, and this cannot occur without being followed by some evil results. No fixed age can be given for the breeding of heifers, it should be dependent on the rapidity and character of the development of the individual.

Desirability of Co-operation of Breeders.

It would seem highly desirable that some form of co-operation, in breeding methods, should be established by communities, such, for instance, as the joint ownership and use of males by several parties rather than one. In theory this proposition sounds well, but in actual practice it has not worked satisfactorily in the majority of instances, as illustrated by the universally undesirable results from the formation of stock companies in the ownership of stallions. In this instance, however, it is only fair to venture the assertion that the initial troubles among these companies is generally the fault of the organizer or promoter, the seller of males, who unloads something on the company that does not prove satisfactory. One cannot conceive of any logical reasons why several men in a community could not form a co-partnership in the ownership and use of good sires. If such a plan could be followed, the good influences of superior sires would become more far-reaching and fewer males in all would be needed than in the case of individual ownership.

Probably it would not be wise to advocate a single breed of cattle, for instance, for each community, but it would unquestionably be wise to limit the breeds to those only which are peculiarly adapted to the conditions of each community and the lines of production therein pursued.

There is no disputing the fact that individual likes and dislikes vary greatly, but it nevertheless seems to be the case, that if one man introduces a certain breed, his nearest neighbor will at once introduce another, apparently for no other purpose than to have something different; whereas, if they were both using the same blood it would work to their mutual advantage.

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LA FAYETTE STOCK FARM

The Largest Importers in America of

German Coach, Percheron and Belgian Stallions

Stock For Sale at Our Stables, State Fair Grounds

J. Crouch & Son

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R. S. Shaw of Iowa, in writing on cattle breeding, says the first step in the line of improvement must come from the cessation of the practice of admixing the blood of the various breeds and of using grade or scrub sires. The next step is to accept the experience and achievements of specialists in developing the different types of cattle.

Never wean the foal too quickly but by degrees. It is best for both the mare and foal to take two or three weeks to do it. Feed foal often, both during the time of and after weaning.

Always be careful to give the mares plenty of exercise in the late fall and winter after the work on the farm is done.

Mica Axle Grease

Best lubricant for axles in the world—long wearing and very adhesive.

Makes a heavy load draw like a light one. Saves half the wear on wagon and team, and increases the earning capacity of your outfit.

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Thoroughbred Jersey Cattle

Brown Bessie, St. Lambert and Pedro Strains.

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Young Stock for Sale

Peabody-Wall Co.

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FOR SALE—

PERCHERON HORSES HOLSTEIN CATTLE...

2 Young Black Percheron Stallions
5 Young Holstein Bulls
10 Young Holstein Heifers
ALL REGISTERED

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Fresno, California.

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FOR SALE—RICHLY-BRED YOUNG bulls from cow having High Official Yearly Records. Also a few heifer calves of best breeding. For particulars address

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Importer and breeder of RED POLLED CATTLE, SHROPSHIRE SHEEP, RAMBOUILLET SHEEP, HORNLESS AMERICAN MERINO SHEEP. Both sexes for sale. Take electric car at Petaluma or Santa Rosa for LIVE OAKS STATION. Address all mail to

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For Sale Our Herd Bull Sargent Fox, 64833

As we have dispersed our herd, except a few heifers for home use, we are forced to offer for sale this valuable sire. We will sell him at a low price to a breeder who is in a position to give this bull a chance to make a record.

Leffingwell Rancho. Inc., Whittier, Cal

The Whiting Jersey Stock Farm Company

Is making the very best strains of blood fresh from the island of Jersey a specialty.

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Great Land Opening in California

President Roosevelt has signed the Special Act of Congress granting our complete irrigation system 45,000 miner's inches of water from the navigable Sacramento River. Free water right; rich, black sediment soil; rail and steamboat transportation. All fruits and vegetables yield enormous returns.

10, 20, and 40 acre lots, from $30 to $100 per acre; terms one-sixth cash, balance in five years. For information and booklet, write F. E. ROBINSON & CO., 216 P. E. Bldg., Los Angeles, Cal.

Live Stock and Dairy

THE MILKING MACHINE.

THE milking machine has been the subject of investigation by the Department of Agriculture, and a report has been made by C. B. Lane, assistant chief of the dairy division, to Secretary Wilson.

Recent improvements in milking machines, Mr. Lane says, have led to their introduction and practical use in some of the larger dairies of the country, and there are indications that these machines may come into general use in the near future and become an important economic factor in the dairy industry.

With the type of machine used in the investigation the milk is drawn by intermittent suction which is created by either a vacuum pump or a steam ejector. The machine consists of a heavy tin pail with a tight-fitting cover in which the motor is located. There are teat cups which fit over the teats of the cow, and the milk is conveyed to the pail through rubber tubing. Steam engines, gasoline engines or electric motors are used for power.

A machine milks two cows at a time. The experiments showed that much time was saved by the use of the machines over that required by hand milking, and that the yield of milk was fully as great, though the percentage of fat was somewhat less in the machine-drawn milk.

Some bacteriological experiments were made to test the sanitary character of the machine-drawn milk. As might have been expected, the machine-drawn milk was found to contain decidedly smaller numbers of bacteria when the machines were kept in clean condition. It was found, however, that the machines were somewhat difficult to clean and that care was required. If properly cleaned and sterilized, the machines may be very effective in the production of sanitary milk.

Registered Holstein Dairy Cow

Mother of a World's Record Breaker. Minnewawa Stock Farm.

HOLSTEIN-FRIESIAN CATTLE.

The cattle known in America as Holstein-Friesians belong to the Shorthorn, lowland race, native to the low-lying, fertile lands of Europe bordering on the North Sea; of which race, from the dairy standpoint, the Holstein-Friesian family is the most highly developed. These cattle might have been better named Friesian, since Friesland, and the neighboring provinces of Holland, is the central home from which this breed of cattle has been so widely disseminated over the old world, and from which some 10,000 head of foundation stock has been brought to America. The Friesian people are among the most conservative of the Germanic race, still holding to, and speaking among themselves the old Friesian language, although also able to speak Dutch, the official language of Holland. They have been equally conservative in holding to their ancient industry of cattle rearing, an occupation for which their low-lying lands are especially fitted; and, as the Roman historian Tacitus speaks of them nearly 1900 years ago as cattle breeders, paying a tribute in cattle and hides to the Roman empire, so we find them today making dairy husbandry their main industry. Holding mainly to one occupation down through the centuries, and passing the business from father to son, it would be strange indeed if their breed of cattle did not reach a very high degree of development; so it is in no way surprising that we should find these Friesian dairymen possessed of a breed of cattle which, as an all-around dairy breed, is superior to any other breed known.

A Dairy Breed.

While in character the Holstein-Friesians are essentially a dairy breed and are so regarded in America, yet as an all-around dairy breed the matter of beef and veal must not be lost sight of, and in Holland these are very important points. There few cattle are allowed to pass their seventh year; but before they pass out of their prime they are fattened and sold as beef. The late Prof. I. P. Roberts in speaking of Holstein-Friesian beef said: "I ate it for three weeks, and the English beef for two; and while not so fat as the Shorthorn, it was to my taste superior." The breed reaches full growth and maturity at about five years of age, reaching full height at between two and one-half and three years of age, and each year for the two following years adding about one and three-fourth inches in length, three-fourths of an inch in width of hips, and two inches in girth of chest. Mr. S. Hoxie, former superintendent of H.-F. Advanced Registry, states that the average measurements of cows upward of five years of age received to entry in the fourth volume of the Advance Registry were as follows: "Height at shoulders, 51.8 inches; height at hips, 53 inches; length of body, 64.9 inches; length of rump, 21.4 inches; width of hips, 21.9 inches; width at thurl, 19.6 inches; girth of smallest circumference of chest, 75.6 inches." He states that the average weight of these cows was 1262 lbs., and that the average measurements are those of what might be deemed a typical animal of what is technically known as the milk-and-flesh form of the breed, the form that is most popular in America.

Claims for Superiority.

Owners and breeders of Holstein-Friesian cattle base their claims for the superiority of this breed over all other dairy breeds mainly on the following points: First, that the Holstein-Friesian is a large, strong, vigorous cow, full of energy and abounding in vitality; second, that her physical organization and digestive capacity is such that she is able to turn to the best advantage the roughage of the farm, converting the same into merchantable products; third, that she yields large quantities of most excellent milk, fit for any and all uses and especially fitted for shipping purposes; fourth, that heredity is so firmy established through her long lineage that she is able to perpetuate herself through the production of strong, healthy calves; and fifth, that when for any reason her usefulness in the dairy is at an end, she fattens readily and makes excellent beef.

While men usually engage in the dairy industry for the profits directly and indirectly to be obtained, and not for the health's sake or for the pleasure therein, yet the aesthetic side of any business should not be lost sight of; for in the breeding of Holstein-Friesians all of these objects may be attained, the owner deriving such pleasure and satisfaction from the ownership of fine animals as can in no way be measured in money.

Western Farmers' Needs.

The time is fast approaching when even the Western farmer cannot afford to keep a cow mainly for the calf which she produces, as in such case the handicap against beef production is too great. When a calf takes practically all the milk its dam yields, it starts out in life with a mortgage upon it to the value of the cost of keep of its dam for one year; and this debt, as well as the cost of raising, must be repaid out of the selling price before there can be any true profit in the beef. If the owner of such cows plan to milk them, run the milk through a separator, sell the butter-fat to a creamery and feed the skim milk to the calves, he introduces the labor factor and finds himself a full-fledged farmer-dairyman, with all the labor incident to dairying, and cows that will hardly yield enough to pay for the extra work: Over and above all labor and the cost of keep, the average Holstein-Friesian cow will show a nice profit on the butter-fat she producers; while the skim milk will not only rear her own calf, but a couple of litters of pigs besides.

An ideal beef form has been created in the mind of the public, and a false prejudice engendered against

anything that does not agree in form with that ideal. At present this unjust prejudice militates against the dairy-bred steer on the hoof, even though he be as well reared as the beef steer; although when it comes to the final show down at the block, the difference between the two is not great. Rear a Holstein-Fresian steer as a Short-horn is reared, and he will indeed be an expert judge who can distinguish the beef when it is placed before him at the table; while repeated tests at the block have proved that the per centage of choice cuts is nearly as large in the one case as in the other. As an all-around breed, and the one approaching the nearest to the long-desired dual purpose animal, the Holstein-Freisian is unsurpassed.—Malcolm H. Gardner.

INCOME FROM AYRSHIRE COWS.

The value of a dairy breed is the net profit received above the cost of food and care given, and in order to obtain results of actual business I sent requests to the leading breeders of Ayrshires to give me the yearly returns from their Ayrshire cows, with cost of keeping. Some of the returns are of no especial value as the herds are not all Ayrshires, but I have given below the result of such as are indicative of the breed, and have withheld owner's name, giving a number instead.

C. M. WINSLOW, Secy.

Herd No. 1, 15 Cows.

Milk sold	$1912.33
Milk and butter used in family	175.00
Bull service fees	15.00
Stock sold	1293.00
	$3395.33
Cost of feeding	$2613.00
Net profit	782.33
Net profit per cow	52.00

Herd No. 2, 35 Cows for Two Years.

Milk sold @ 5c per qt. 1904	$3712.00
10 head of stock sold 1904	617.00
Milk sold in 1905 at 5c per qt.	4173.07
43 head stock sold in 1905	4457.00
	$12959.07
Cost of feeding 35 cows @ $65 each for two years	$4550.00
Wages and board of two attendants for two years	1680.00
Cost of feeding 53 head of young stock until sold @ $25 each	1325.00
	$7555.00
Net profit,	$5404.00
Net annual profit per cow	77.20

Herd No. 3, 21 Cows.

Milk sold	$2254.00
Cream sold	625.00
Stock sold	1450.00
	$4329.00
Cost of keeping cows @ $55 per head	$1155.00
Cost of keeping young cattle	575.00
Cost of selling milk and care of cattle	881.00
	$2611.00
Profit	$1718.00
Profit per cow	81,80

Herd No. 4, 5 Cows.

Milk sold	$597.10
Stock sold	100.00
	$697.10
Cost of keeping	$267.54
Net profit	329.56
Net Profit per cow	65.91

Herd No. 5, 27 Cows and 5 Heifers.

Milk sent to cheese factory, no account made of new milk fed to calves.

Received from factory for milk	$1608.07
Stock sold	1160.00
	$2768.07

Calling the five heifers equal to three cows would make an average yield, above what was used to raise calves, 6250 lbs. of milk per cow and a gross income per cow of $92.27. As no return was made of expenses, I am unable to give the net income.

Imp. Hackney Stallion, Royal Pioneer

Second Prize Pasadena Horse Show, 1907. Imported by Wm. McKie of Los Angeles. Sold to Mrs. Severance, Valencia Farm, San Bernardino, Cal.

PUMPKINS AR E GREAT CROP FOR HOGS.

A writer in a farm exchange, who appreciates a good things, says:

About the nearest to a genuine snap I have struck for a long time is the pumpkin crop I got in the sweet corn this year. In two acres of late sweet corn I mixed some sweet pumpkin seed with the corn in the planter boxes, using about three pounds in all.

We have just finished hauling them in, and we got twenty-one big wagonloads of pumpkins off the two acres, and it does not seem to have hurt the yield of corn in the least. All they have cost us is the cost of the seed, about 75c. There is about a carload of good pig feed in them and several hundred pounds of seed, which we will save and sell. This may sound like a pretty big pumpkin story, but if you don't believe it I will show you a photo of the pumpkins next month.

The large cheese or so-called sweet pumpkin seems to be the best for this sort of planting. With live pork worth 6 cents per pound, I don't see why more farmers don't grow pumpkins this way.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

SHARPLES' BUSINESS DAIRYING FREE

Contains all the money-making points of dairying. Among the subjects treated you will find How to Feed, What to Feed, When to Feed, What Foods Produce Most Milk, How to Take Care of Milk-Producing Foods, How to Feed Silage, the Care of the Milch Cow, and many other profitable and practical suggestions that help swell the profits of the dairyman. With the book we will send additional information telling you how and why you can get the most out of you milk by using the

Sharples Tubular Cream Separator

We guarantee that with a **Tubular** you can get 50 per cent **more** cream over the old pan method of skimming, and 6 per cent over any other cream separator made. Sharples Separators get **all** the cream and the **Tubular** is the easiest running, easiest cared for, and easiest kept clean. There is just one tiny piece in the bowl, the milk can is low and handy, the bearings are self oiling. Write for the "Business Dairying" at once stating number of cows you keep. Ask for booklet D.260

Mr. S. L. Boyer, Venetia, Pa., says "The Tubular makes me $255.00 yearly."

The Sharples Separator Co.,
Toronto, Can. WEST CHESTER, PA. Chicago, Ill.

Does this stream of water look good to you?

It certainly does to the two men standing beside it. They are the President and Treasurer of the company to whom the plant belongs.

It is raising 40 inches of water from 250 feet below where they are standing. This water goes into a reservoir 18 feet above the pump through an 8-inch pipe-line about one-eighth mile long and you cannot see a pulsation in the discharge if you try. It has been doing this for over a year. There have been no repairs, not even new leathers, and it runs better, if such were possible, today than it did a year ago.

How many pump users can say this?

It shows conclusively that it pays to install good machinery.

We have done this for these people and we can do it for you if you give us a chance. Our catalog tells all about it. Mail us a card asking for it today.

POMONA MANUFACTURING COMPANY

Corner of Bertie and Gibbs Streets POMONA, CAL

Dairy Development at Corcoran

New Town in Kings County Surprises the State With Its Remarkable Advancement Along Stock and Dairy Lines

THE readers of the Cultivator have heretofore been apprised of the extraordinary value of farm lands around Corcoran when viewed from the standpoint of the dairy interests.

It is to be doubted if there is another section of the state better adapted to stock raising, or more essentially to dairy work than this, because of the nature of the soil, the climate and the abundant supply of water for irrigation. A country that can produce six crops of alfalfa a year, which averages from one to one and a half tons to the acre, has not a superior, certainly, on the Pacific Coast. The possibilities of the dairying interests are only measured by the number of dairies which can find a location in this favored section. A year ago one of the pioneer creamery men of the Pacific Coast, Mr. George A. Smith, of Los Angeles, known throughout the Coast states as a successful creamery operator, purchased a holding of several hundred acres of land, and began the collection of a herd of dairy cows. Today he has as fine a herd of cows as any dairyman would wish to own, and he is adding to that herd the best strain of milk cows wherever he finds them to his liking, Jerseys being his favorite breed.

Two years ago the ground at Corcoran on which the above farm buildings are situated was grazing land for sheep. Today more than one hundred well-appointed farms cover this and adjacent territory.

Creamery.

Within the year Mr. Smith has built and equipped one of the most substantial and up-to-date creamery plants in the state. It is fireproof, with double air spaces in both walls, and cement floors, a six-ton capacity ice machine, and machinery complete for pasteurizing cream for butter making and also for shipping to Los Angeles for the sweet-cream trade in that city.

Speaking of pasteurizing and its value in improving the quality of butter, creamerymen say: "If they could get the cream delivered perfectly sweet and free from bad flavors, they would not bother with a pasteurizer, although it would improve the keeping quality of the butter, but the hand-separator creameries will find cream every day that can be improved by pasteurizing and keep it from spoiling the whole lot. Besides, pasteurization is absolutely necessary in order to at all times deliver the cream sweet and in good condition for the sweet cream trade in the city. After this sweet cream is pasteurized it is refrigerated and shipped to Los Angeles in sterilized cans. Mr. Smith pays his patrons an additional price of about 10 per cent. for the sweet cream.

"Pasteurizing takes out most of the bad flavors in the cream that come from the feed or from the action of bacteria. The germs that cause the bad flavor in the cream can nearly all be killed, and their growth can be checked, so that when you add a good starter to your cream directly after pasteurizing and leave it stand at 70 degrees for a few hours it will develop a fine delicate flavor, so that you can cool it down to churning temperature and get it made into butter before the undesirable germs will renew their growth; and as butter is not a suitable germ food, it can then stand a long time at a medium low temperature before it will go off in flavor; whereas the butter made from raw cream with its undesirable germs in full growth will go off in flavor much faster." This accounts for the extra fine quality of the Corcoran creamery butter.

Mr. Smith believes in the value of pasteurization, and as an argument in its favor, states that his butter brings the highest price in the Los Angeles market, and that the demand far exceeds the supply. This butter is pasteurized, refrigerated and shipped to Los Angeles. The capacity of the Corcoran Creamery is 3000 cows. Five hundred cows are supplying the creamery at the present time, but it is expected before the season closes that one dairyman will put in 2000 cows, from which he expects to derive a net profit annually of $50,000. He has alfalfa growing for feed now on the greater part of 3840 acres.

Improved Stock.

Within the past season a marked improvement has been made in the character of the dairy cows in and about Corcoran. Good judges of dairy cattle say more thoroughbred Durhams, Holsteins and Jerseys have been shipped to the farms around Corcoran, than to any other dairy locality of similar size in California. Not only is there an improvement in dairy stock, but beef cattle as well. It has been learned that large profits are realized from ranging beef cattle in the hills, and when grown, in finishing them off with alfalfa and a little Kaffir corn, in which the valley abounds.

High Prices.

It is a fact worth mentioning at this time, that prices are higher for all dairy products this year than at any previous period in the history of the state. By this we mean prices for butter fat. For the month of January some of the dairies in the territory of which we speak paid $8.75 per head, not estimating calves, pigs or skim milk. It can readily be seen what the income would be on a dairy of fifty cows or more, when it is considered that alfalfa and feed in general is produced so cheap. It is difficult to find an occupation in California that pays better returns than dairying in Kings and Tulare counties; and when this fact is generally known, the lands which are now selling for from $30 to $40 an acre at Corcoran, will readily bring $100 per acre. During the past month the Security Land and Loan Company disposed of about 2000 acres of its Corcoran lands, which are of the richest class, and so productve as to cause Easterners to absolutely doubt the returns received from them until they have made a thorough investigation of the facts.

The soil is a deep, rich alluvium, making it the most valuable land in the state for alfalfa, grain, asparagus and sugar beets. Some of it is also well adapted to raisins.

When you consider that as high as six crops of alfalfa can be grown in a season, and that Kaffir corn needs but one irrigation to cause it to produce 80 sacks to the acre, the remarkable fertility of the soil will be appreciated. What is true of corn is also true of wheat, oats, vegetables and sugar beets; wheat often yelding 70 to 80 bushels per acre, and sugar beets here have held the record of the United States in yield, percentage of sugar and degree of purity. Asparagus culture at Corcoran is proving some of these lands especially adapted to that industry. Experts say that the asparagus lands of Corcoran are far superior to most of the asparagus lands of the state, and the equal of the islands in the Sacramento river. No doubt these lands of a peat nature would be especially adapted to the growth of celery. There is also a large acreage of raisins being set out. Chaddock & Son, leading raisin packers of Fresno, are promoting the industry, and have purchased a site for a packing-house.

Climate.

The climate of this section is equable. During July and August, which are known as the hot months, the thermometer will range from sixty degrees at sunrise to ninety-eight or one hundred degrees at noon. In what are known as "hot years" the mercury will occasionally register one hundred and eight degrees, but this is exceptional; and it must be borne in mind that the heat is a dry heat, there being so little humidity in the atmosphere that it is not of the oppressive character that afflicts the people east of the Rocky Mountains. During December, January and February (which are termed the winter months) the mercury will sometimes fall to 24 degrees Fahrenheit (the lowest temperature on record is 20 degrees, only 12 degrees below freezing point), but during the greater part of these months the thermometer will range from 38 to 40 degrees between daylight and sunrise, the coldest part of the day, to 60 degrees at noon. The remaining seven months (March April, May, June, September, October and November), are as nearly perfect as could be asked for.

Corcoran is pre-eminently a desirable home for the agriculturist. Here the dairyman is in his element. The fields produce feed the year round for cattle, horses, hogs, sheep and poultry. Alfalfa is the chief forage plant, and produces four to six cuttings annually. The experienced farmer on irrigated land takes off a crop of barley and then irrigates the same and plants it to corn, and the average crop of corn is two tons to the acre and it sells readily at twenty dollars per ton.

The above illustration shows the growth of alfalfa in the Corcoran district, where from four to six crops are cut annually.

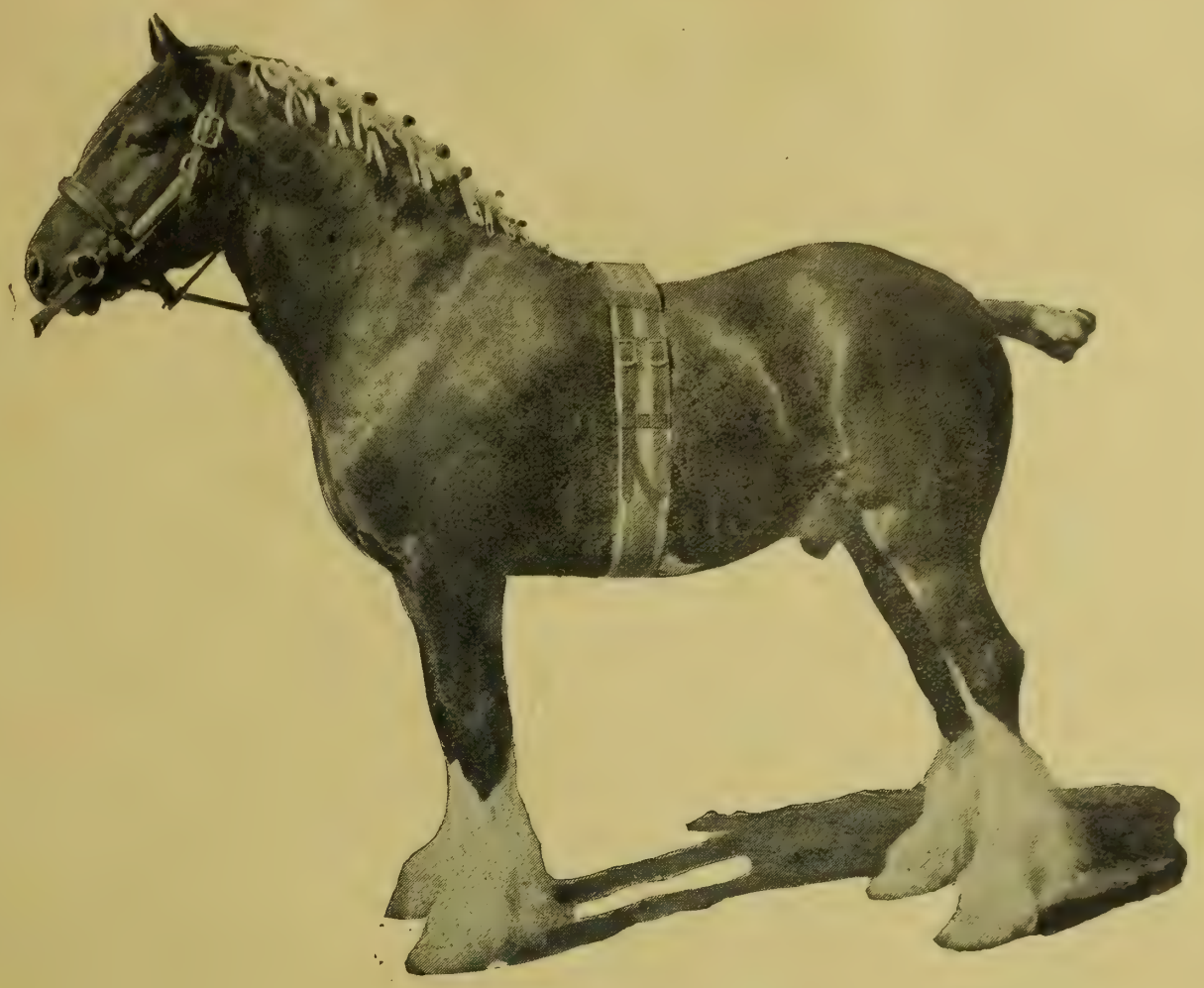
There is plenty of good land to be had at Corcoran at reasonable figures and the demand for labor is so continuous that the settler with limited capital will experience no difficulty in getting a fair start.

CLYDESDALE STALLION-MIRROR.

THE introduction of the Clydesdale as a draft horse has done much towards improving the standard of horses of this class in California. It is to be doubted if any other horse is better adapted to general purpose than the Clydesdale. It has been a question with horsemen which is the better breed for the farmer, the Percheron or the Clydesdale. Both have their strong points, and both are popular in their respective classes. In the Middle West the division is about equal; some farmers preferring the Clydesdale, and others the Percheron. In California the day is rapidly approaching, with the influx of Eastern agriculturists, when a higher standard of the draft horse will be demanded.

It has always been the case with new states that its cattle and horses improve with the growth and development of its agricultural interests. In Kansas the broncho and the cross-bred American horse have given way to the introduction of the finest types of draft and road horses. In Iowa, it is an uncommon thing to see a farmer driving a mongrel team. He is not satisfied unless his work horses are of the most improved breed, and his driving horse is something better than a common barnyard animal. The same is true of Illinois, which has become famous for its fine draft animals, as well as its high type of cattle and hogs. California farmers must get into the van of progress along the line of improved farm stock. We believe they are seeing the importance of this movement, and will reach out and improve their horses and cattle, as they appreciate the benefits to be derived from ownership of the thoroughbred stock.

The illustration presented herewith is from a life photograph of the Stallion Mirror, owned by Wm. McKie, 407 Aliso St., Los Angeles. This is probably one of the best types of the Clydesdale that has been introduced into California for some time. The horse has great muscular strength, is compactly built, and capable of wonderful endurance. Wherever this horse has been shown, as for instance at the Pasadena tournament, he has attracted very general attention.



Imported Clydesdale Stallion Mirror
First Prize Draft Stallion, Pasadena Horse Show, 1907

A WARNING FOR HORSE BREEDERS.

A wide-awake horse breeder gives a timely warning to those who are tempted by high prices to raise colts. He says:

The very rapid increase in the value of all good, useful horses will very materially stimulate the breeding business. Hundreds of people will start in an enterprise that promises such great returns, and the tendency will be to breed almost every animal that will reproduce itself, regardless of quality, soundness and a general desirability.

As a consequence, a great many horses of nondescript character will be raised at a loss alike to those who breed them and to the state, while on the other hand those who choose wisely and breed and raise only the best, using stallions and mares that are deeply bred in the best blood lines of the breeds that they intend to raise, and who by care and attention raise serviceable horses, useful for the purpose for which they are intended, sound, kind and beautiful, will not only make a great deal of money for themselves, but will greatly benefit the section of country in which they live.

There is practically no limit to the demand, at rich figures (which will grow larger each season for the next eight or ten years), for the horse that is bred right, raised right and trained to be good in his class, whether it is as a park horse, a reliable well-manned, sound, handsome family carriage horse, or a sturdy draft horse.

Breed them right, educate them properly, and the produce of a small band of well-bred mares with the right kind of stallion at their head will make their owner rich in the next ten years.

WHEN TO WEAN LAMBS.

No definite time can be named, for much depends upon conditions, kind and quantity of feed available, etc. In fact, letting nature take its course is about as good a rule as can be observed. If the ewe and young are on good feed, the lamb has, of course, learned to eat; and if the mother had to be given some grain to keep up her milk flow the lamb should have learned how to eat it, and so when deprived of its mother's milk entirely it will have learned to hustle for itself, and weaning will not be a noticeable event in its life.

While the milk flow remains good and the ewe is in fair condition there need be no hurry about weaning, leave it to be done by mutual consent of both parties interested. If separation is made while ewe is in fairly good flow of milk she better be confined to rather scanty pasture for a while, but the lamb should be turned into good feed. Rape or second growth clover is excellent for newly weaned lambs. A little bran, oats or even corn may be given with good results. At any rate, the treatment should be such that there be no setback to growth on account of weaning. If lambs suck into September no harm is done.

See Us for Sanitary Milk Bottles. O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

U. S. CREAM SEPARATOR

IS AS GOOD AS REPRESENTED

The Cleanest Skimming Separator.

The chief reason you want a separator is to get more cream—more money— out of your milk. The U. S. gets the most.

Holds World's Record
For Cleanest Skimming

The Simplest Separator.

Both in operating mechanism and bowl construction. Three gears and the bowl are all the "machinery" there is to the U. S.

A "Simple Bowl" Separator.

Only two strong, simple, easily-handled, easy-to-clean parts inside. Gets ALL the cream.

The Most Durable Separator.

Few parts and those strong and finely built of the best materials by skilled workmen.

The Easy Running Separator.

Gearing correctly proportioned, strong but not heavy, accurately fitted, has ball bearings, and runs in oil.

The Safest Separator.

Gearing all enclosed within the solid, low, one-piece, iron frame.

Our handsome free catalogue not only tells, but SHOWS, everything about the construction and operation of the U. S. 27 pictures. Please ask for No. 20.

Laton, Cal., Dec. 20, 1906.

I purchased one of your No. 6 separators last January and have used it ever since. I find it as good as represented. It is still as good as new and does first-class work. It turns very easy. My 12 year old boy can run 12 gallons through without tiring. It skims clean and is very easy to wash. Have been out nothing for repairs.

J. S. Strole.

U. S.
Won Blue Ribbon, California Mid-State Fair. Only One Awarded

PROMPT DELIVERY assured California customers from our San Francisco warehouse, No Delay
Address all Letters to Bellows Falls, Vt.

VERMONT FARM MACHINE COMPANY
BELLOWS FALLS, VT.

NEED OF MINERAL FOOD FOR HOGS.

The longer we feed hogs, the more firmly are we convinced that a liberal supply of salts and minerals is one of the prime requisites for raising heathy hogs—especially here in the corn belt, where the food is naturally deficient along these lines. In his wild state the hog gathered his own salts and minerals and was as healthy as any other wild animal. In his domesticated state we must furnish him with these substances which his system craves, if we would have him enjoy his former health and vigor.

As soon as the little pigs are big enough to drink slop, they should have a little lime water mixed with it daily. Lime water has a tendency to prevent scours and at the same time aids in forming good strong bone. The writer never knew hogs that were fed lime water in their slop while they were pigs to break down. As the pigs grow older, they should be fed a liberal supply of charcoal every week. Charcoal is a great absorbent, and is very effective in ridding the pig's system of the impurities which are constantly gathering there.

It also strengthens the bone and helps to keep the intestines free from worms. To make charcoal, simply rake up the cobs in the hog lot into piles of two or three bushels each and burn them. When the cobs have burned until the pile is a glowing mass, put out the fire with salty water. Then see with what eagerness the hogs and pigs will devour every vestige of the remains. "Eternal vigilance is the price of success" in the swine business, as it is in every other walk of life.—Western Swine Breeder.

USING DISINFECTANTS FOR CHOLERA.

The tar disinfectants should be used daily about the feed troughs, floors, sleeping quarters, etc. No less than a 2 per cent. water solution of the disinfectant should be used, and every week; if the weather permits, the hogs should be dipped or sprayed with a 1 per cent. solution.

The hogs should not be fed on the ground or allowed to drink surface water. A sloppy diet of shorts, bran and corn or oatmeal is best for the sick and exposed animals. The water and slop must not be left in the troughs for the hogs to wallow in, and in order to lessen the opportunity for infection through the food powdered copper sulphate may be dissolved in the slop and drinking water in the proportion of one ounce of the copper sulphate to every ten gallons of water and slop.—[R. A. Craig, Indiana Experiment Station.

PUMPKINS AND COAL SLACK FOR HOGS.

The following from Wallace's Farmer contains information that is often called for by those who have not had much experience:

An Iowa correspondent writes that he has some fine pumpkins, and wants to know if they would be good to fatten hogs with; and if so, whether he should cook them or feed them raw. He has thought of cooking them and then adding oil meal, and wishes to know whether it would pay. He has also purchased a load of coal slack, and wishes to know if this would be healthful for his hogs.

Give them all the coal slack they want. There are no direct fattening qualities about it, but it doubtless takes the place of charcoal. For some reason or other hogs are exceedingly fond of it, and generally get what is good for them, even if they have to steal it.

As to pumpkins, we do not know of anything better for growing pigs. You could scarcely fatten hogs with them, because there is so much water in a pumpkin that the hog will not get enough of it to furnish the requisite amount of nutriment. The seeds form an excellent worm medicine, and the inside of pumpkins is an especially desirable feed where hogs are affected with worms. We would not go to the trouble of cooking them. Simply break them open and let the hogs have what they want. When cholera breaks out among hogs, about the only things permissible to feed them are pumpkins and blue grass.

WHAT DOES IT COST TO RAISE PIGS?

At the Canadian experimental farms alfalfa, clover and root pasture supplementing meal rations were compared with roots and meal fed in pens, and with meal in pens without supplementary feed, using five lots of five pigs each.

In the thirty-five days of the test the gain ranged from 1.31 pounds per head per day on root pasture to 1.77 pounds with the lot fed on roots inside.

The gain was most cheaply made with the last-mentioned lot, costing 3.09 cents per pound, and was most costly, 4.23 cents per pound, with the lot fed on meal without supplementary feed in pens.

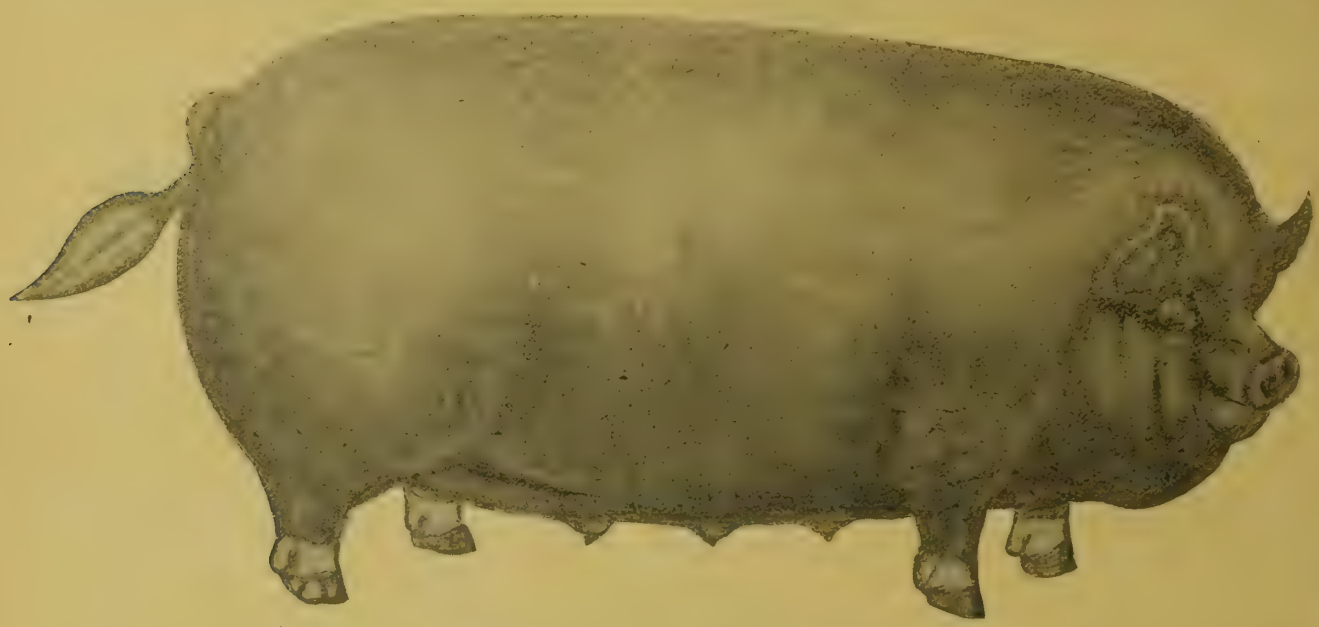
When pigs were pastured on an acre of ripe peas, the returns in pork were not satisfactory, but the effect of the exercise and the peas together was wonderfully beneficial so far as form of pigs was concerned, and so far as fitting them for finishing off for the packer when brought into the pens was concerned.

PROPER FEED MAKES HOGS HEALTHY.

Any hog, to have a clean system, must have the correct kind of feeding. Naturally, the hog eats much grass and forage. When he cannot get it he is unable to do what nature tells him to in keeping his system in exact tone.

Pigs grown on forage and carried into the breeding period and then through the winter on rightly cured hay and soft slops made of clean feed, are always ready to withstand exposure. A clean digestive apparatus and liver can throw off many impurities of a hog's body.

Alfalfa pasturage is found to make the best bone and muscle on pigs of any known forage.



The Medium of Quick Return.

With the advent of the Eastern farmer comes the standby of the farm—the hog. With alfalfa a cheap and wholesome feed; with the market around $7.00 a hundred for finished pork, where can a quicker or safer medium be found to return richer results than in the hog. Fifty of the above type of the "king of the farm" will lift any reasonable mortgage within a period of a few years.

GIVE THE BROOD SOW EXERCISE.

The sow, like all other breeding animals, should have plenty of room to exercise; also, a good dry and well-bedded place to sleep. A coop 6x6 feet is an ideal place and we have found shredded fodder makes just a little the best nest for them to sleep on.

We keep our coops in an open field; in fact, we have no inclosed hog lots, even our fattening hogs are never shut in lots or pens, but let run on pasture fields. This gives the needed exercise and aids in digestion, keeping them spry and active.

It is a pitiful sight to see a hog cripple off on three feet just because they have been inclosed in a close, foul pen. Then again, the hog is a splendid manure spreader, which requires no team or hand to assist.

"That man has a very shady business record." "Why, what has he been doing?" "He puts up awnings."

The man who pities himself always is pitiable.

A grafter by any other name would still be a thief.

Most makers of lamp-chimneys don't mark their wares—possibly they are ashamed to.

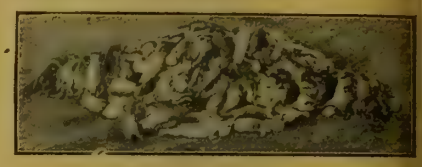
If I didn't make as good chimneys as I do, I wouldn't mark mine either.

I mark mine "MACBETH"—my own name—because I am proud to be known by them.

My Index—it's free—tells other reasons why my lamp-chimneys are marked and why I am proud to put my name on them. May I send it to you?

Address, MACBETH, Pittsburgh.

Now is the time to go for gophers with Bille's Gopher Poison. The gophers go for it and it will go for them good and plenty every time.



This is a photo of 201 killed in one day on a ten acre field before they could get back to their holes, with one bottle of

BILLE'S GOPHER POISON

Endorsed by Agricultural Colleges and Experiment Stations. Not one of the ordinary poisons, but in a class by itself. Has had greatest success in the Middle West. The secret being that it is most attractive to gophers, squirrels, etc., and sure death to them. It gives the grain a glossy coating, retaining the poison for weeks. Hundreds also die in their holes by eating it there. We have bought the patent rights for this section and are selling at the eastern price of $1.25 for large bottle. The ingredients cannot be bought at a drug store for that price. Money refunded if not as represented—so printed on the bottle. If your dealer does not keep it send $2.50 for two bottles, express prepaid by us.

We do not send less than 2 bottles.

Compounded under Bille's patent by

West Coast Stock Food Co.

818 San Fernando St., Los Angeles, Cal.

SILVER LACED WYANDOTTES

At the recent Poultry Breeder's Show we won eight ribbons on eight entries. "The best quality seen here for years, 1st cockerel has the best marked wing we have seen." —Pacific Fancier.

Eggs $1.50 per 15.

WHITE PLYMOUTH ROCKS

Grand laying strain, large vigorous stock, eggs especially recommended for incubator hatching, $1.00 per 15, $5.00 per 100, special mating $1.50 per 15.

FAIRVIEW POULTRY YARDS

A. E Nelson, El Monte, Cal.

EGGS FREE

If not as represented

SALSIPUEDES EGG RANCH

120 Acres devoted to poultry, fruit and dairying

S. C. White Leghorns; Ringlet Barred Rocks; Fishel Strain White Rocks

EGG $1 50 Per 15, $6. per 100

G. G. Redman, Watsonville, Cal.

Eggs for Hatching

Thoroughbred White Rock eggs for hatching at $1.50 for 15, $6 per hundred. Mammoth Bronze Turkey eggs, 20 cents each. Also a dozen choice W. R. cockerels and two M. B. gobblers for sale.

Jennie R. Frater Charter Oak, Cal.

Home Phone 2179

THOROUGHBRED *S. C. White Leghorns*

They are vigorous and healthy and great producers of large white eggs. They have good size, rich yellow legs and bills. Eggs from special mated pens, $1 per 15, $5 per 100

W. R. BENJAMIN

28 Palmetto Ave. Sacramento, Cal.

Single Comb White Leghorns Exclusively

Eggs for Hatching, $1.00 per 13, $5.00 per 100. High Fertility Guaranteed. Phone Park 682.

I. E. Beadle 801 St. Louis St., Los Angeles, Cal.

Thoroughbred Poland China Swine

Black Minorca and Barred Rock Poultry

High Grade Stock of Best Strains. Young Stock For Sale.

W. Bassett - - Hanford, Ca

Thoroughbred Poland China Pigs and Sheats

of both sexes for sale at reduced rates for 30 days. Address

W. R. McCaslin & Son, Walsh Station, Sacramento County, California.

Geo. C. Roeding, Fresno, Cal., breeder of

Thoroughbred Holstein Bulls and Heifers

Thoroughbred Berkshire Boars and Sows

GETTING INTO SHEEP BUSINESS.

The prices for breeding and fat sheep still continue high, even higher in many respects than last year. Many farmers who have been on the point of entering the sheep business in a small way have been scared by the prevailing high prices and the possibility that prices would drop and sheep become a drug on the market. While we realize that breeding sheep are high and hard to secure we believe that there will continue to be a strong demand for them for several years to come and at pices that are remunerative.

Last year the high prices paid brought to market many flocks of fat breeding ewes that should have been used in the production of more sheep. The result is that in the West as well as in the East the number of breeding ewes is far below the average, it will take several years, as estimated by conservative sheep men, to replenish the supply, because the range limits for sheep are being cut down by home-seekers in the West, and the increase must be made by the more extensive growing of sheep in the Central and Eastern states.

Considering all these features it looks as though one need not be backward about getting into sheep growing. It is, of course, not advisable to buy a large flock at once; secure a few and grow into the business. Then we cannot see that anyone need lose. Not every man can grow sheep successfully, but anyone who is willing to devote the proper amount of thought, time and energy to the matter is not going to experience a signal failure.

PASTURING GRAIN FIELDS WITH SHEEP.

The following is an account published of a Kansas man's grazing his sheep on his wheat:

A large flock of sheep was turned onto the wheat as soon as it furnished any grazing. They naturally grazed most on the side toward the buildings. They thus ate down some thirty acres quite closely. They were then removed.

At harvest time the yield from that close grazed was more than thirty bushels per acre. The yield from the other part of the field was but fifteen bushels per acre. The season was a wet one, and where the sheep did not graze the crop was rank and much of it lodged. On the part grazed the stems were far more numerous than on the other part, because of the abundant stooling of the grain.

When spring grain is prone to grow thus rank on rich prairie land, the crop will certainly be benefited by such grazing. Even in a dry season it may be thus helped on land spongy in character, that is, land that sinks much beneath the tread. Such land is common in certain areas of the prairie. Under the conditions named, the benefit comes in part from the treading and in part from the stooling of the grain. The treading helps to firm the land, and in this way its power to retain moisture is increased. There is also the incidental benefit from the droppings which fall upon the land while the sheep are grazing.

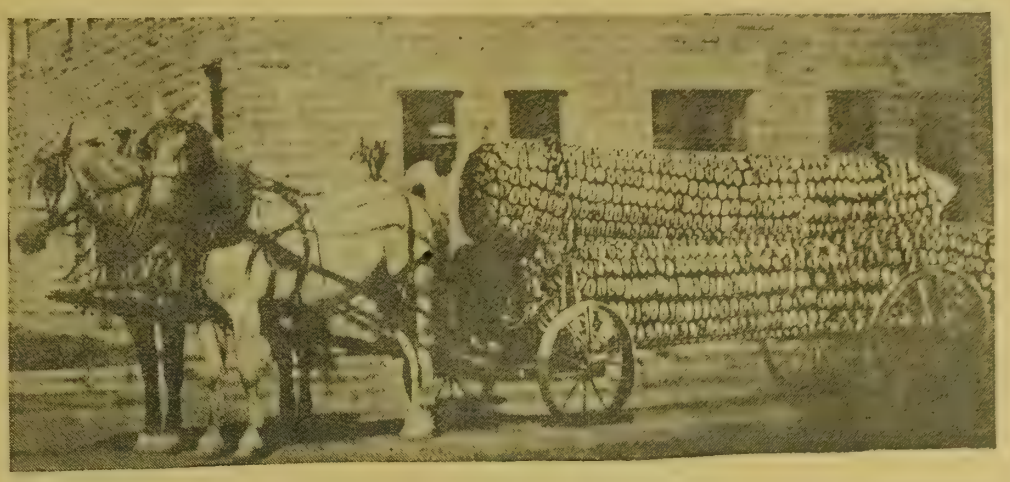
There is no doubt but that production in spring grain could be greatly increased by this pasturing with sheep in certain seasons where land is rich and not easily injured by treading. Such land is found to a greater extent on the prairies than elsewhere.

CORN CORN CORN CORN

Plant Eastern-Grown Seed Corn

Johnson & Musser Seed Co.

Up-to-Date Seed House



Iowa Silver Mine, Grown on the Rosemead Ranch by James Gooch from our Eastern-grown Seed.

We have just received our usual carload of Nebraska-grown hand-picked Seed Corn, and offer it at the following prices f.o.b. Los Angeles:

King of the Earliest, 85 days. The earliest Dent variety. Ears short, 12 to 16 rows, well filled. Grain long and yellow, making an extra quality meal. Per lb. 5c; 100 lbs. $3.50.

Improved Leaming, 90 Days. Ears are large and handsome, with deep, large grains; orange-yellow color and red cob. Per lb. 5c; 100 lbs. $3.50.

Pride of the North, 90 Days. One of the best sorts; ears have from 14 to 16 rows 8 to 10 inches in length, slightly tapering; color light orange. Per lb. 5c; 100 lbs. $3.50.

Minnesota King, 100 Days. A large-grained variety; yellow. Per lb. 5c; 100 lbs. $3.50.

Wisconsin White Dent, 90 Days. A perfect white Dent corn, of good quality, resembling the Leaming. Per lb. 5c; 100 lbs. $3.50.

Champion White Pearl, 90 Days. A fine white flint corn. Per. lb. 5c; 100 lbs. $3.50.

Early Mastedon. Having grown and sold the Early Mastedon corn four years, we recommend it as being decidedly the best of all Yellow Dent varieties. Every one who has seen it grow is enthusiastic in its praise. Large ears, deep grains, and as many as 24 rows on a cob. Eastern grown, per 100 lbs.$3.50.

The Iowa Silver Mine. A large White Dent. The grains are as large as the Hickory King, but longer, having a small cob. It is the most desirable of all White Dent varieties. Per 100 lbs. $3.50.

Red Cob, Ensilage. A large stalk with a profusion of leaves which makes it the most desirable for ensilage. Price, per 100 lbs. $3.50.

Stanford White Flint. An excellent White Flint corn. More prolific than the King Philip. It is an excellent extra early table corn. It has long ears and a small cob. Price, per lb. 5c; per 100 lbs. $3.50.

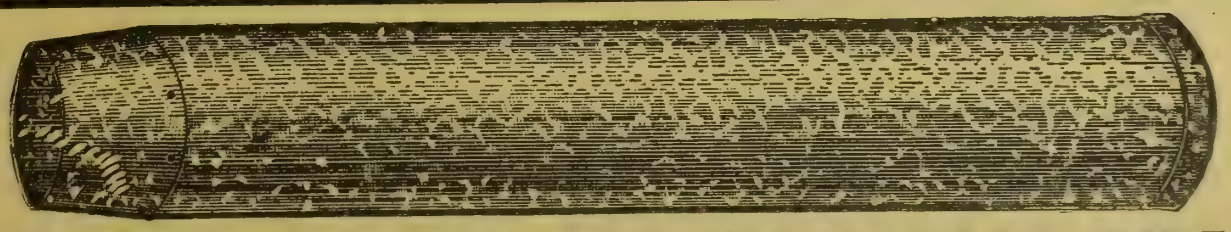
White Cap Yellow Dent. Exceedingly prolific and hardy, resisting drought much better than other varieties. Per 100 lbs. $3.50.

Reid's Yellow Dent. This is the variety that has been brought to a high state of perfection by the Illinois growers, and drew the medal at St. Louis because it averaged the greater number of pounds per bushel. Price, per 100 lbs. $3.50.

Kink Philip, 90 Days. A small yellow variety, very popular in this market. Price on application.

Hickory King, 110 Days. A white variety, having the largest grain with the smallest cob ever introduced in a white corn. Price on application.

Johnson & Musser Seed Co. 115 N. Main St., Los Angeles



TALLERDAY SURFACE IRRIGATION PIPE

SAVES WATER, GRADING AND TIME

The **only** way to **Irrigate Alfalfa. Cheaper** than **Flumes.** This is only **one** of our **specialties.** We make **Riveted Water Pipe** in lengths of **ten feet** from **single sheets.** Let us **prove** to you that we make **Pipe** and **Tanks right.** WRITE FOR CATALOGUE.

TALLERDAY MANUFACTURING CO.

636-7 Pacific Electric Building Los Angeles, Cal.

HOW TO TREAT FOOT ROT IN SHEEP.

There has been a great prevalence of foot rot in sheep throughout the Northwest this fall, for which continued wet muddy weather is largely responsible, for filth of some sort is necessary to the production of this disease. When mud and dirt become permanently lodged in the foot, they occasion inflammation which ultimately causes the whole foot to decay, and make the sheep lame. It is possible to cure foot rot unless it is a prolonged or extremely serious case. First trim the toes off square, remove all dirt that is in the foot, and wash with an antiseptic. Any of the coal-tar sheep dips may be used. Then apply a salve made of lard, sulphur (or flour) and coal-tar dip, care being taken to have it penetrate all crevices that may appear in the foot, and bandage with a firm white cloth. Inspect in a few days and if not healed the treatment should be repeated. This is almost a sure cure if persistently followed—[Progressive Farming.

A scrub lamb was raised in company with a high-grade Southdown lamb at the Louisiana Experiment Station, with the result that on the same feed and care and in the same time, the scrub lamb gained 32 pounds and the Southdown 43. The former was 155 days old, while the latter was 129 days old. There is a moral to this experiment.

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PERNICIOUS LEGISLATION.

Seldom have we noted a more profound mistake than was made by the late Legislature of Washington, in the enactment of a law which exempts all owners of money, mortgages, bonds, stocks, tax certificates, book accounts and bills receivable from taxation. Even more surprising is the fact that Governor Mead of that state has signed the bill, which has now become law. The reason assigned for this startling action by the legislators who pushed the bill to its passage is, that owners of monies and credits are prone to commit perjury when confronted by the assessor, and the exemption of the money-loaning class will tend to improve public morals by lessening the opportunity for the commission of perjury when the rich are called to list their property for taxation.

This reasoning is fallacious and pernicious, outside the fact that the law is strictly class legislation, and therefore unconstitutional. It savors most strongly of iniquity. Any law which lifts the burden of equitable taxation from one class and imposes it on another, is unjust and wrong.

Any law which is created to shield the rich and burden the poor, is iniquitious and bad. That is just what the tax-exemption law of Washington is, if correctly reported in the newspapers. The reason assigned is without standing in justice or morals. If the money-loaning class in Washington is so corrupt that it commits perjury to evade honest listing of its property for taxation, the legislators should have followed the example set by the Iowa law makers, and provided for tax inspectors, to go through the records of each county and ferret out property unlisted, in the way of mortgages, bonds, judgments, recorded stocks, etc., and return the same for taxation to the county treasurer; adding a penalty clause which is severe enough to act as a reminder for all future time to the party caught dodging his taxes. Or, the legislature might have amended the perjury act to make its provisions amount to confiscation to those who falsely swear to cover up their property.

Every individual owes his state government, and his municipal government, that proportion of financial support commensurate with his holdings. The city and state must protect the lives, liberty and property of all their citizens, and where one class, the most wealthy, at that, dodges its just proportion of taxation a proportionately greater burden is placed upon the producing classes, the farmers, owners of homes, the laboring man, the widow with her little holding, to make up the deficiency. The government owes allegiance to the citizen just in proportion as the individual supports the government, and no more. The man who shirks his obligations in a financial sense, is as much of a traitor to his country, as the man who preaches anarchy from the curbstones of our city streets. There is honor in neither. Both are unworthy of protection and both are moral and political outcasts.

Under this law as reported, the rich whose wealth consists of money, bonds, notes, mortgages, etc., will hereafter be a high privileged class, and will not be called upon to pay a penny with which to carry on the government which gives them protection. By reason of the loss of hundreds of thousands of dollars of heretofore taxable property, from the tax rolls, it will be necessary to greatly advance the tax rate on the farmers, merchants, mechanics and the working people who own their homes. This is "class legislation" pure and simple.

It is such laws as this that are fostering socialism. It is such laws as this that are breeding discontent among the laboring classes and weaning away patriots to the ranks of anarchists. Washington may gain some wealthy residents by the enactment of its "Tax-exemption Law," but its material and industrial building up will be correspondingly retarded.

ALCOHOL AS A SUBSTITUTE.

The manner in which the denaturized alcohol bill has been strengthened by the recent congress has led to the hope that that fluid may be profitably and cheaply employed as fuel and for the purpose of generating power. "This, at least, is the expectation of President Roosevelt, who has written to Senator Hansbrough, of North Dakota," says the Des Moines Capital, "who was foremost in urging the legislation expressing the opinion that the new law means much to the farmers of the northwest." A recent bulletin issued by the department of agriculture, covering the results of a series of tests on alcohol as a fuel for gas engines, bears out this view very markedly.

The bulletin declares that any engine on the market today operating with gasoline or kerosene can operate with alcohol fuel without any structural change whatever, with proper manipulation. Practically the same thermal efficiency is obtained with alcohol as with gasoline. Engines constructed specifically for the consumption of alcohol can be sold cheaper per horse-power than the gasoline engines now in use, and the storage and use of alcohol will be vastly less dangerous. One of the most attractive features of the new fuel will be its comparative odorlessness, which will be a boon not only to the autoist, but to the general public. "In localities where there is a supply of cheap raw material for the manufacture of denatured alcohol," says the bulletin, "and which are at the same time remote from the source of supply or gasoline, alcohol may immediately compete with gasoline as a fuel for engines;" but, it concludes, "in most localities it is unlikely that alcohol power will be cheaper than or as cheap as gasoline power for some time to come."

It is the opinion of the men who conducted the tests in question that on account of its greater safety and adaptibility to the work, alcohol should immediately supplant gasoline for use in boats, and the possibility is voiced that in time the alcohol engine may entirely supplant the gasoline and kerosene types.

EVILS OF BOILED WATER.

The declarations made by health boards and physicians that our drinking water may be made pure by boiling, receives a serious set-back by a distinguished physician of France, who, in a translation made for the Literary Digest, states that boiling water does not completely sterilize it, but renders it unfit to drink, and frequently results in many troubles of the stomach and bowels.

We all know that boiled water has a flat, insipid taste, but we have endured this because we have been led to believe its hygienic properties were enhanced. But it seems in this we were wrong. According to the authority quoted nothing will kill living germs in water but heat under pressure sufficiently intense to change its character without destroying its valuable compounds. Says the writer of the article: "The purification of drinking-water, from the bacteriologic point of view, presses upon the attention of hygienists with undeniable force. Numerous processes have been devised and proposed to this end. Some are based on various kinds of filteration, others on the use of properly selected chemical substances, which bring about the coagulation and precipititation of the organic matter, as also the destruction of the disease germ; finally, there are others that require only the use of heat for the desired sterilization. The last are, in the present state of science, the only ones that present all the desirable guarantees and give results that are absolutely perfect from the biological standpoint. But their application is not exempt, in practice, from a certain number of serious inconveniences.

"When we are content, as often happens, with boiling water, we obtain only a partial and quite illusory sterilization. It is true that heat is the surest agent of sterilization and that no living organism can resist a sufficiently high temperature; but although most of the microbes are killed in a few minutes by heating to the boiling-point, certain spores require for their destruction a sensibly higher temperature. Our uncertainty on the subject of the sterility of boiled water is the cause of its lack of trustworthiness in surgery; it is also the reason why we can trust only partially in its harmlessness in the preparation of food. Also, even admitting that boiling sterilizes the water this does not make it a perfect beverage, because, in the first place, it is totally deprived of the air which water normally holds in solution, and is made heavy and indigestible by this lack of aeration; and i nthe second place, the carbonates of lime are precipitated, which injures its flavor; and finally, the earthy matters in suspension are also precipitated and make it insipid.

"To obviate these many disadvantages, we must in all cases avoid water that has been simply boiled, and use water sterilized by heat under pressure, which alone is able to answer all hygienic demands. Numerous devices have been invented for its preparation; without taking time to describe them, it suffices to say that they should, if they are properly constructed, raise the water to a temperature of 130 deg. to 150 deg. C. (266 deg. to 302 deg. F.), prevent the escape of the dissolved air, and not allow the precipitation and seperation of the soluble compounds. When these various conditions are fulfilled, and only then, water, sterilized, from the microbiologic standpoint, retains its organic properties and remains absolutely drinkable; it is both easily digestible and perfectly harmless, which is never the case with water that has been simply boiled.

"It is desirable to make public the faultiness of boiled water, which is too often regarded as excellent, and which is nevertheless the cause of numerous maladies—severe stomach troubles, intestinal infections, frequently dangerous, and various types of surgical septicemia. All this is in spite of the classic injunction, 'boil your water,' which should be regarded as a makeshift and not as an exact and all-sufficient rule."

The spectacle of wholesale graft presented in the San Francisco disclosures, will make the country think that the earthquake and fire were a retribution sent to cleanse the city.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

Sixty to a hundred cases of eggs a day are being shipped from Chino.

Escondido shipped last week 941 pounds of butter and 2700 pounds of cream.

The heavy rains in all parts of the south have literally put the stock in clover.

It is feared the late heavy rains will damage the bean crop in Ventura County.

Olive cabbage growers say that a large per cent of the early cabbage has gone to seed.

Milk dealers in Los Angeles are being prosecuted for violation of the pure food law.

A successful milking machine is being operated at Donlon Bros. ranch between Hueneme and Oxnard.

Holtville farmers, who recently organized a cooperative company, have awarded a contract for building.

In 1906 California produced 1,994,814 bushels of corn; 26,883,662 bushels of wheat and 5,156,298 bushels of oats.

The express poultry shipments from Escondido for the week were 1723 pounds of chickens and 198 cases of eggs.

The Imperial cheese factory makes 100 pounds of domestic Swiss cheese per day and it brings 19 cents a pound.

Babi & Van Horn Brothers are shipping 1100 pounds of Swiss cheese from their factory at Imperial to Los Angeles.

The California and Mexico Land and Cattle Company has brought in fifteen more cars of cattle for its range below the line.

C. E. Tait, of the Department of Agriculture, who has been making his home in Riverside for some time, is to be stationed permanently in the Imperial Valley.

The Townsend-Dayman Investment Co. has decided to subdivide 700 acres of the tract west of the Southern Pacific railroad a short distance west of Newport Beach.

Cannon brothers, of Imperial, have just harvested 1¾ tons of alfala per acre from their land for the first cutting of the season. The seed was sown a year ago.

Hay dealers of Los Angeles met and organized the Los Angeles Hay Dealers' Association, which will be an adjunct of the Los Angeles Merchants' Exchange.

The Erand Brothers of the San Joaquin ranch shipped 600 head of sheep yesterday to the Houser Packing company of Los Angeles. Sheep are bringing now something like $7 a head.

El Monte will have a large acreage planted to potatoes this year. The latest to embark in this line is Mr. Hollihan, who will put in 100 acres. The soil in this vicinity is especially adapted to potato raising.

The theory of the rapid decline of Salton sea is being verified, it having fallen seven inches to date, says the Imperial Standard. At this rate it soon will be out of reach of the railroad, even with heavy winds.

Wells west of the Santa Ana River that have not flowed in eighteen years are now flowing. The long rainy spell has had its effect on the underground flow for several weeks, but within the last few days the artesian flow has been geatly strengthened.

Dr. W. C. Rayen, county veterinarian, has been advised that the Department of Animal Industry has delegated Dr. S. J. Radibaugh, Government Veterinary Inspector, to come to Riverside county and assist in the eradication of Texas fever now infesting stock at Rincon.

If you want to get in, cut in;
If you are not yet in, butt in.
Show the world how fine your fettle,
Try a WANT AD., show your mettle.
If success won't set in, cut in.
This is how to get in: Butt in!

HORTICULTURE.

Apricot men aver the crop in Orange county will be light the coming season.

A number of Orange county's largest apricot growers have replaced their apricot trees with walnuts.

Southern California has been visited by an equinoctial storm this week, considerable thunder accompanying.

New baled alfalfa hay is coming to town, Imperial valley undoubtedly leading the world in this product.

A big strawberry warehouse is being erected by the big Jap colony just north of the power-house at Arcadia.

A Cultivator representative now in Ventura county, reports few or no apricots this season.

The movement or oranges the past week has been exceptionally good. Between 25 and 30 cars were sent from Ontario.

The San Joaquin Fruit Company of Santa Ana is now preparing considerable acreage for the planting of orange and lemon trees.

At Elsinore a carload of oranges were shipped from the Lakeland ranch and a car of lemons from the Truell ranch last week.

J. M, Beck of Chino is setting out fifty acres of walnut trees for five different parties on adjoining tracts north and east of town.

Riverside shipped 272 cars and three cars of lemons last week. Total output of oranges and lemons for the season is now 2152 cars.

Work is being crowded on the Monrovia fruit-preserving plant, and it will be in operation in about twenty days. It was recently capitalized for $50,000.

The Towsend-Dayman Company made arrangements two weeks ago for the planting of 2000 walnut trees on their Newport Heights tract in Orange county.

The cool nights, with some frost of last week, was a boon to the citrus fruit in some sections. It is now in excellent condition for shipping with very little puffing.

The alfalfa growers of Chino and the surrounding country held a meeting Saturday evening at the Chino hall to organize an alfalfa growers' club to regulate prices.

The south is gradually going out of the apricot business, not because excellent crops cannot be raised, but because other branches of horticulture offer greater profits.

They are very busy at the Tustin Packing Company this week. They have shipped eight cars, consisting of three seedling oranges, four navel oranges and one of lemons.

Thirty thousand oranges were put through the new wrapping machine 265 times and they came out "absolutely perfect" at the last run during a trial at Riverside.

The apricot crop is practically gone on the San Joaquin Ranch, and the ranchers have been interfered with so much by the wet weather that many acres of land will not be planted.

There is still in Highland about a fourth of the orange crop, and at the rate cars are being given it will take till the first of June to get the fruit off the trees and into the Eastern market.

There are more complaints coming into this office from the districts that are using distillate in the orange orchards of spotted fruit; oil is not good for the trees and the damage from it is far greater than the expense of fumigation.—S. A. Pease, San Bernardino.

Dr. R. H. True, government physiologist, who has been here in the interests of the United States Department of Agriculture investigating the lemon, left this afternoon for Reno, Nev., where he takes up a line of experiments with drug raising in that section. Dr. True says he expects to return to Riverside next year.

Northern California

AGRICULTURE.

Kern county is to have an ostrich farm.

The Feather river is at the highest stage ever known.

Reclamation district No. 70, in Sutter county, is flooded.

The principal business street of Oroville is under six feet of water.

At Tulare about one quarter million dollars was paid to dairymen in 1906.

The Sacramento river has left its banks and is spreading over miles of territory.

The Lucerne creamery is now turning out about 3000 pounds of butter per day.

F. W. Koehler, of Kirkwood, reports sheep and other stock doing well.

A carload of cattle escaped from the train between Gazelle and Redding—twelve beeves are missing.

The land near Brighton was flooded and the farmers have driven their cattle to higher ground.

The residents of Elmira and vicinity are beginning to take an interest in alfalfa growing and dairying.

The frost of last week did much damage to deciduous fruit and early vegetables at Bakersfield.

For the first time in twenty years Santa Clara county farmers are admitting that there can be too much rain.

The flooded reclaimed district No. 108, south of Colusa, contains 75,000 acres of the richest land in the valley.

The principal damage from the floods about Sacramento will be in loss of stock, much being undoubtedly drowned.

On the University farm near Davisville the creamery building is ready for shingling and the foundation for the stock pavilion is laid.

Practically all of the town of Biggs is under from one to three feet of water. The Southern Pacific tracks are under water for miles north of Biggs.

Sam Barger sold to John Russel, Wednesday, 30 hogs that tipped the beam at 6000 pounds for the bunch. The price was 8 cents a pound.—Hanford Sentinel.

The Registered Holstein bulls Sir Josephine Hartog Gerben, Sir Mercedes Mechthilde Josephine were sold last week by J. H. Williams to Pioneer Land Company, Porterville.

The Corning agent for Wells-Fargo's Express Company, reports the shipment this week of 3020 dozen eggs, 24 dozen chickens, 3000 pounds butter, and about a ton of turkeys.

J. C. Rice, of Hanford, had a bunch of wheat pulled from his ranch, the stalks of which are a yard long, the heads large and well filled. Pretty good for St. Patrick's Day, isn't it?

The Sacramento River reached the highest point ever known at Colusa—29 feet 4 inches—when a break occurred north of Princeton in the levee south of Colusa, which caused the river to recede rapidly. Water from these breaks flooded a vast area of farming land and will cause a million dollars loss in Colusa county.

TOWN KILLERS.

There are several kinds of town killers and every town is afflicted with one or more of the different specimens.

1. There are those who go out of town to do their trading.
2. There are those who are opposed to almost all kinds of employments.
3. There are those who seem to imagine that they are the sole proprietors of the town.
4. There are those who take special pride in belittling and deriding all public-spirited men.
5. There are those always ready to stand out in open opposition to any movement not originating with themselves.

And there are those who delight to turn the cold shoulder to and seek to injure the reputation, character or credit of their neighbor.

HORTICULTURE.

The apple growers of Sebastopol are planning to organize.

The Truckee river has reached the highest mark in its history.

There will be 1000 acres of new vineyard planted this season in the vicinity of Arbuckle and College City, in Colusa county.

One Fair Oaks grower has shipped from his orange trees this season 1515 packed boxes of oranges.

The Sacramento valley is in the grasp of the worst flood that has ever been registered in its history.

Not since 1862 has there been anything like the high water throughout the San Joaquin and Sacramento districts.

Stockton reports the worst floods since 1862, and the whole city is flooded, the business portion being under water.

The village of Dredgeville, near Oroville, has been entirely swept away by the flood waters of the Feather river.

The Government barrier at Brown's valley, twenty miles east of Marysville, broke and 600 feet of the embankment has washed out.

J. B. Wrangham, near Sacramento, sold this season from nineteen trees four years from planting, one-year-old stock, $24 worth of olives.

Howard Buffum of Sacramento county sold from six acres of olive trees not ten years old nineteen tons, giving more than $100 an acre.

At San Lucas the crop will be principally barley with indications of the best crop in twenty years; and the same may be said of King City.

The frosts of Tuesday of last week, did much damage, says a Fresno dispatch; 20 to 50 per cent. of the peaches and nearly all apricots are killed.

A force of 60 Japs is at work on the Italian-Swiss colony, south of Lemoore, setting out wine vineyard. About 150 acres have already been planted.

That there will be the greatest flood this spring or early summer in the vicinity of Tulare Lake, widespread damage to farming lands is a matter of little doubt.

The early age of olive-bearing trees about Fair Oaks, shows how well suited this locality is for the olive industry, some trees produce $1.50 each of olives the fourth year.

This season has been a most unfavorable one for the olive in the north. The early frost spoiled the olive for pickling and reduced the price more than one-half.

The Eucalyptus Forestry Company is the name of an incorporation at Fresno formed for the growing of Eucalyptus and other trees and shrubs from which valuable by-products can be extracted.

Bridges are all under water, and hundreds of acres of land are under water in Northern Solano county. Owing to the continuous rains farmers are very much discouraged, and not more than 65 per cent. of the acreage has been sown to grain.

The Hanford Experimental Forestry Company took out Eucalyptus for setting on a 35-acre tract Monday. This has been a fine season for planting the tiny trees which have been raised here from the seed. The company now have about 60,000 trees of different varieties planted and the future promises much.

Sheep are selling in the Northwest for the highest prices known for thirty years. Word comes from Linn County, Oregon, that sheepmen are receiving as high as $6 and $7 a head, and spring lambs a few weeks old bring $2.50 each. Those who purchased bands of sheep a few years ago are reaping small fortunes. L. M. Powell, of Albany, Oregon, recently sold 6000 stock sheep in Montana at $5 a head, and is holding 30,000 for better prices.—N. W. Horticulturist.

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

Buy the World's Famous Egg Food No. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and breed. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for greatest batch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. FILCHER, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

Petaluma Incubator Co.

Main Offices and Factory, Petaluma, Cal., Box F.
Los Angeles, 565 South Main Street.
San Francisco Office and Salesroom, 33 Market St.

S. C. White Leghorn Eggs

For Hatching, from Captain Mitchell's Strain.
Large Birds. Prolific Layers. Large White Eggs.
Order Books Open for 1907 Season.

The Lincoln Avenue Poultry Yards

Carl C. Curtis, Owner, Pasadena, Cal.
Successor to Captain E. Pryce Mitchell
Lincoln Ave. and Ventura St.—Altadena Cars

Excelsior Mills

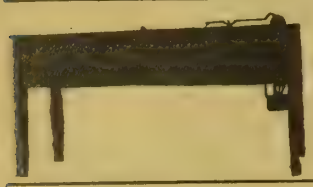
Excelsior Chick Food

Excelsior chick food is a perfectly balanced ration for your growing chicks. Will raise the largest possible per cent. of your baby chicks. All pure food, no shriveled grain and filler used in its manufacture. Absolutely clean and free from dust. No waste.

The Best Food on the Market

Ask for Excelsior. If your dealer cannot supply you write us. Circular free if you mention the Cultivator.

Del Monte Milling Co., 242 Central Ave., Los Angeles, Cal.



For a **Practical Pointer** in **Poultry Profits** use the **Principal**

They Are the Best on Earth
Principal Incubator Co., Graton, Cal.
Send for New Price List

Best Incubator

On the Coast—best anywhere. Made right—prices right. Guaranteed. Catalogue free. Also great **Combination Brooder.** It is great—both indoors and out. When the chicks are hatched feed them the celebrated

West Coast Chick Feed

A rightly balanced ration for the little ones. Manufactured by

West Coast Stock Food Company
818 San Fernando St., Los Angeles, Cal.

When writing advertisers, mention Cultivator.

Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

POSSIBILITIES OF A "BEACH LOT."

I HAVE written of the possibilities of a town lot in the way of keeping chickens; of the improvements which can so often be made on a farm in the profits of fowls; now I would like to tell for the encouragement of others about the achievements of a resident on the ocean beach.

In response to a letter from Venice, "Venus on the Sea," as some of its residents call the charming beach resort on the Pacific Coast near Los Angeles. I went to visit a sick hen (professionally.)

The description of the illness was rather vague, and here let me say when any of our readers are in trouble with sick hens and want some advice that I beg of them always to mention the breed of the afflicted fowl, the symptoms, the food, the method of feeding, the way they are housed and anything that may help me to diagnose the case.

The letter reads: "I have found your articles more than helpful to the amateur chicken raiser and thanks to them so far have lost none by disease.

"I have a White Leghorn hen now, which puzzles me so that I appeal to you. There seems to be a large puffy swelling in her comb, at the base it is fully an inch wide, some puffiness around the eyes and a generally pale appearance. She keeps nodding her head as if in pain. She seems altogether dejected. Her general health is otherwise good.

"My chickens are at the beach on the sands where people told me I could not raise chickens, but so far, one year, I have been very fortunate and everyone comments on the niceness of my flock.

"In answering this, kindly omit my name."

The owner of the sick hen lives in a beautiful little bungalow on the very sands of the ocean, almost within reach of the spray. She has flower beds round the house, narrow beds, for all the soil has to be brought from the loam on the hills; the flowers looked thrifty, especially the great variety of nasturtiums. The exterior as well as the interior of the house showed cultivated taste and attention to little details which augured well for the care of the fowls, so that when the charming mistress led me to the tiny backyard I was not surprised to see two neat pens for the fowls, each with its hen house open entirely at the bottom and a doorway on the side away from the prevailing breeze. The little houses and fence whitewashed. Each yard had a trap-door opening on to the sands and I learnt that the hens at day break, before the rest of the family are up, go out upon the beach to take their morning constitutional scratch, for a few handfuls of wheat are scattered on the sands to reward the early birds for their earliness. There were plenty of little shells on the sand, fine enough for the hens to swallow, but they still were well supplied with grit in boxes, as their mistress found without extra grit to grind the food the egg-shells were too thin. The hens had had a load of oat straw to scratch in outside the fence; this kept them very nice and clean, but old "Boreas" one stormy night had carried it out to sea, so they now have to be content with dry sand instead of straw. They are fed scraps from the table with plenty of green food, and all the milk, sweet, clabbered and curd that they want, a plentiful supply.

"I had 190 eggs a month from eight hens for three months," said their little mistress, "so now I am keeping twenty hens and I am putting down eggs in water glass according to your directions."

The hens all looked thrifty and well and I noticed they had a large box of ashes from the cook stove and the open grate to bathe in and so keep themselves free from vermin.

"The lice gave me some trouble," explained the little hen wife. "I was doing so well that I thought I would buy some more fowls, so I sent to a commission house in Los Angeles for some, they looked all right, but in a few days developed roup and they had lice, which in a short time affected the whole flock."

It is never safe to bring in strange fowls, roup and other ills are propagated by this means.

I noticed that part of the little yard was fenced off with two-inch chicken wire and a tiny garden made in the enclosure, in which were small rows of early vegetables, radishes, lettuce, peas and beets or Swiss chard. The sight of the tender green of these vegetables was an irresistible temptation to the fowls and several of them in their attempts to reach the greens had wounded their combs, which were cut by the wire.

That was all that ailed the sick hen, an end of the wire had deeply penetrated her large comb; she is a Leghorn, it had inflamed and swelled to double its size near the head, the fowl had suffered greatly, but the swelling was now going down and the place was healing of its own accord, aided by nature and the vigorous constitution of the hen.

Bathing a wound like that with peroxide of hydrogen or even with vinegar and water when it first occurs, is often of great assistance, but as all the wounds on these hens seemed old I advised anointing them with a little carbolic salve or carbolated vaseline. Wounds or slight abrasions of the comb very frequently result in chicken-pox and the cure for that is carbolic salve.

Chicken-pox is a germ disease. The germ has to find entrance in a slight abrasion, so that if the germ of the pox is floating in the air or is on other chickens it will find entrance in a wire cut, or a wound from fighting birds. This is very frequently the case where there are cockerels that fight, or the germ may even insinuate itself through the bite of a flea or insect of any kind, hence carbolic salve applied to a wound will often prevent or cure the chicken-pox.

Injuries to the comb and wattles are more or less common and are usually the results of fighting or getting caught in the wire or lath divisions of the house or yard. Sometimes a thin comb is nearly torn off, or a wattle badly split. To avoid deformity the parts should be brought closely together and stitched with a needle and fine white silk, each stitch being tied separately. The blood supply is so good that even though three-fourths of the comb be torn, stitching will result in the rent healing nicely and presenting a good appearance.

The bird should be isolated, as the rest of the flock will be apt to pick the wound and acquire bad habits. I have used "New skin" the liquid court plaster, on a wounded comb with excellent results. It entirely prevented a scar.

One word more before we leave the shore. To those who may contemplate having a few hens on the beach, I would say that this lady has found the Leghorns more hardy in her little place than the Orpingtons.

The narrow line between success and failure must be carefully watched. Even a straw will show which way water flows.

"Why do Leghorns do better with me than Orpingtons?" was the last conundrum asked me.

There may be several reasons for this. Possibly there may be a weakness in that particular family or strain, as we call it of Orpingtons, inherited from sickly ancestors, or it may be that the Leghorns being what we call "close feathered" or "hard feathered," their feathers lying closely or tightly to their bodies can withstand the wind and spray better than the Orpingtons with their softer, looser feathers. Or it may be that the smaller fowls not presenting as large a surface to the wind were not affected by it as much as their larger cousins. These Orpingtons had swollen joints, their owner said, and crooked bones. I think it came partly from inherited weakness and partly from the buffetting of the cold winds.

INCUBATOR TESTS.

I made a number of incubator tests one time that demonstrated some points in artificial incubation that I have never seen in print, viz.: that Leghorn eggs will make a good hatch on a lower temperature than it takes to hatch Plymouth Rocks or Brahma eggs. I know exactly wnat I am talking about in this instance. My tests proved it beyond my expectations. My expectations were gathered from the nature of the fowls and the difference in the size of eggs, also from little points gathered through observing the results in making hatches of mixed eggs.

My test was made with six 100-egg incubators. They were made exactly alike and all run alike in the same room and under exactly the same conditions. Before starting I tested the thermometers to make sure there were no fractions in differences. I set three machines with Brown Leghorn eggs and three with B. P. Rock eggs. I set each machine three times. The test was made in the months of May, June and July. Ran the temperature on the Leghorn eggs in one machine between 101 and 103, on another at 102 to 104 and on the other 103 to 105. I duplicated the plan on the three machines filled with Plymouth Rock eggs.

The lower temperature made the best hatch on Leghorn eggs while the higher temperature made the best hatch on Plymouth Rock eggs. For the second test I reversed the machines, that is, I took the one that had been run on the higher temperature and ran it on the lower temperature, made this reverse with both sets of incubators. The results came out as before. The higher temperature made the best hatch on Plymouth Rock eggs while the lower temperature made the best hatch on Leghorn eggs. With the Plymouth Rock eggs there was only a small per cent. in favor of the higher temperature over the middle temperature, but with the Leghorn eggs the lower temperature made a great gain over the middle temperature.

The third trial emphasized the results. This is the first time I have ever spoken of these particular experiments. I made the experiments to test an idea formed while watching incubator results on different kinds of eggs and through studying the nature of the sitting and non-sitting varieties of poultry. I am thoroughly convinced that there is fully one degree difference between the right temperature for Leghorn eggs and the right temperature for Plymouth Rock or Brahma eggs. My convictions are that two degrees difference between Leghorn eggs and Brahma eggs is about correct.

It is the experience of all incubator operators that Leghorn eggs hatch a day earlier than Plymouth Rock eggs in the same incubator. The same thing invariably happens in a hen's nest, yet a Leghorn that will set on her own eggs will hatch in 21 days, and the same of the Plymouth Rock. On first thought the difference in temperature seems queer, but if we extend the thinking and reasoning, it is not so queer after all.

It is a fever that makes hens broody. The larger varieties are more inclined to broodiness, the fever is higher. With the larger body, the heat is greater in proportion to the feathers. It is a hard matter to find opportunities to take the temperature under a setting Leghorn; only once have I ever been able to do so on account of the wilder nature and the sensitiveness in having things other than eggs under her, but in the one good test the temperature showed 102 on the eighth day. On the other hand I have known the thermometer to show as high as 106 on the twelfth day under a Plymouth Rock hen. In dozens of tests the thermometer has shown 104 after a week's incubation under the larger varieties. Let me further say that as a general rule, the best results are obtained with incubators with a degree higher temperature in a cold room than in a warm room. This difference is due to the bottom of the machine being colder in a cold room. Remember, I write this for the good of incubator operators instead of to boost particular incubators.—M. M. J.

THE EGG BASKET.

The best prices for fresh eggs are obtained during January and February.

The fat hen lays the smallest number of eggs.

Never allow a bad egg to find its way to the egg basket.

It costs about one cent each to produce eggs.

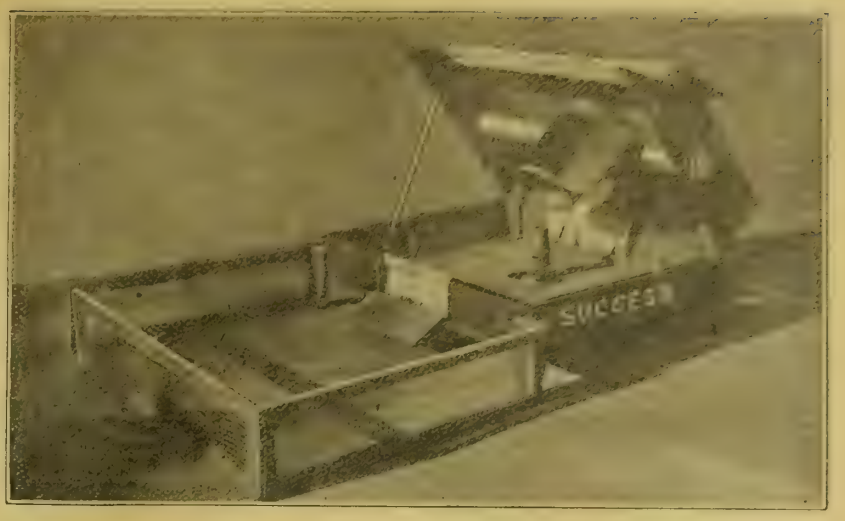
Always clean your eggs before marketing them. This should be done with a dry woolen rag.

Never scare the hens or allow anyone else to do so, as it reduces the egg production.

Don't try to sell preserved eggs as fresh. It may cost you the loss of a valuable customer.

Eggs over one week old should never be kept for hatching.

Crushed charcoal fed once or twice a week is invaluable in warding off indigestion. Hens that have access to the ash pile will pick out the small bits for themselves. Nature tells them that it is good for them.



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Best and Cheapest. Center heat, perfect adjustable ventilators, patent safety lamp. Made of clear redwood. For use either indoors or outdoors. Easily cleaned. **Sold on trial.** Send for illustrated circular.

We also make the **"Old Trusty"** incubator, a machine that will hatch more eggs than any other incubator on the market. Catalogue tells the complete story. Send for it and get our **Free Trial Offer. Write today.**

McClanahan Incubator Company

709 South Main St., Los Angeles, Cal.

Beef Scraps

GUARANTEED ANALYSIS:

Protein 65%
Fat 8%

Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

Raw Bone

GUARANTEED ANALYSIS:

Protein 25%
Phosphates 45%

Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods

WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

The Largest Poultry Supplies House in the United States

Peerless Chick Feed

Is the Cleanest and Purest Chick Food possible to produce and insures

Health and Rapid Growth in Baby Chicks

GRANULATED MILK—the Pure Protein Food

315 S. Main **HENRY ALBERS CO.** Los Angeles

Maud S, 1st Prize Hen, San Jose
Bred and Raised on My Ranch

Baldwin's White Leghorns

Baldwin's Leghorns are all right in blood lines and for heavy laying right straight through the year they are unexcelled. I breed nothing but White Leghorns and make them a study, aiming at quality and market value combined.

My yards are modern in every respect and I invite inspection. Think of us when you think of White Leghorns.

My best pens are made up of stock from the first prize winners at the great show at Madison Square Garden, New York, 1905 and '06.

All stock sold on a guarantee to be as represented.

Eggs, $1.50, $2.00, $3.00 and $5.00 per setting (15). Incubator lots, $6.00 and $10.00 per 100. My $6.00 eggs are from selected yards. My $10.00 eggs are from especially selected matings of my finest birds.

Send for catalogue giving full description and prices of my matings and show records.

Frank E. Baldwin *The White Leghorn Specialist*

Phone Suburban 82 46 Washington Ave., San Jose, Cal.

THE FEATHERLY FARM ORPINGTONS

BUFF BLACK WHITE

Our yards are now mated for the season; containing winners of nearly 100 Prizes, Specials and Cups at California's leading shows. Our handsome Mating List and Catalog describes them all. Send for it today; it is free. Our birds are bred for utility and heavy egg production as well as beauty. All egg orders booked in rotation. Satisfaction guaranteed.

P. L. Harley, Box C, Redlands, Cal.

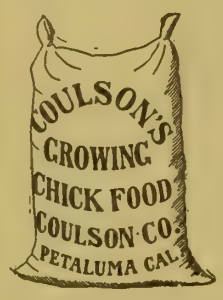
S. C. White Leghorns

Eggs, $1.00 and $1.25 per setting of 15; $4 and $5 per 100. High fertility guaranteed.

C. C. Hookabout *Watsonville, Cal.*

MY EXHIBIT OF
WHITE, BUFF AND PARTRIDGE **Wyandottes**
Won 26 Ribbons and Special Prizes at the Poultry Breeders' Show, 1907
R. D. Box D87 **L. E. BERKEY,** Fullerton, Cal.

Coulson's Growing Chick Food



Coulson's Growing Chick Food is a balanced ration of cracked grains, seeds, mill feeds, meat and bone meals, carefully mixed according to a formula which has been compiled only after much experimenting.

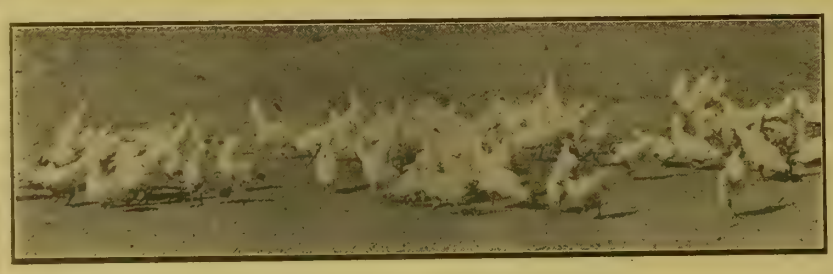
It contains everything that a young chick requires up to three months old, and can be fed either from the commencement, or to gradually supersede **Coulson's Special Dry Chick Food,** say four to six weeks old.

It can be fed until the chickens are three months old, when you can commence feeding **Coulson's Improved Mash Egg Food.**

When making the change from **Coulson's Special Dry Chick Food** to the **Growing Chick Food,** it will be found best to do so gradually, changing one meal at a time.

If you will feed **Coulson's Growing Chick Food** to the chicks they will be fully nourished, and they will enjoy their feed. In consequence they will grow rapidly, and mature quickly.

ASK YOUR DEALER FOR IT.



Flock of three-months-old pullets fed on **Coulson's Special Dry Chick Food,** and afterwards on **Coulson's Growing Chick Food.**

One of Our Numerous Testimonials

"I tried **Coulson's Growing Chick Food** exclusively the first year in the business, on Brown Leghorns. Sold the cockerels as broilers at 9 weeks old, weighing 2 pounds, 3 ounces each.

"I tried my own mixture of food the next year, and took the same care of the chicks, as near as I knew how; and sold 75 cockerels as broilers, weighing 1¼ pounds each at same age.

"Having tested at my own expense the two methods, I have concluded the **COULSON FOOD** is superior."

MANUFACTURED BY

Coulson Poultry and Stock Food Co.

Petaluma, California

GERMAIN SEED CO., Los Angeles, Distributing Agents

Publishers' Department

SIMON MAIER PACKNG PLANT.

NEARING completion the Simon Maier Packing Company have one of the most extensive packing plants west of Chicago. Its capacity is a three million dollar business annually. It can kill and care for, when finished, about 2500 head of cattle, sheep and hogs daily. The main building is five stories high, constructed of reinforced concrete. The floors, walls, ceilings, and supports are of solid cement. The buildings are fire-proof, the sanitary conditions are as perfect as architectural skill can provide. Inspectors from Washington pronounce the structure one of the most modern in appointments of any similiar plant in the country. Few California people have knowledge of the immensity of the packing industry in Los Angeles. In a future number the Cultivator will speak at length of it.

ABOUT FARM POWER.

THE simple gasoline engines manufactured by the International Harvester Company are doing much in revolutionizing farm work. Many is the place they are now employed where formerly slow, laborious hand labor had to be resorted to. There is hardly any limit to the times and places where power of some kind can be used on the farm. With the perfecting of gasoline engines a long step was taken toward the lightening of farm burdens. With the perfecting of the I. H. C. engines, the farm power problem was completely solved. These engines were made not only reliable, but also simple, so that farmers, who are not supposed to be mechanics, could run them. The I. H. C. engines quickly made the tread mills and the old fashioned horse-powers a thing of the past. I. H. C. engines furnish an economical power, because they use little fuel. They can be adapted to use alcohol as well as gasoline, and therefore are destined to be run cheaply. They can be had in many sizes, such as can easily be moved from place to place, and are especially adapted to light work.

Local International agents can supply catalogs and give particulars about these engines. If you need power or want to post up on power questions, call and take up the question with them.—Authorized notice.

COLUMBUS ENGINES TO THE FRONT.

GREENLEAF-COMPTON COMpany, Pacific Coast Agents for Columbus engines, located at No. 121 South Los Angeles street, report an excellent trade on Columbus engines so far this spring. The third carload has left their factory at Columbus, Ohio, for Los Angeles, and more are to follow as soon as they can be shipped.

They are installing two miles from Anaheim, a sixty-horse pumping plant for E. B. Berry, and when completed will be one of the finest plants in that vicinity. They are also building a rock-crushing plant for the United States Granite Pressed Brick Co., of Los Angeles, which will take a sixty-horse Columbus engine for the motive power.

Columbus engines have been in the field for sixteen years, and their output is one of the largest in the United States.

The reliability and economy in running, as well as the simplicity in construction, puts them at the top notch when gasolene or distillate engines are under consideration.

EGGS NO GOOD.

MR. M. A. Schofield, of Gardena, says that owing to the poor class of eggs sent, he will not hatch for the public in general as he anticipated but will sell chicks from the hatchery, which will be more satisfactory to all concerned. To use his own words; "We have been receiving eggs of all ages, sizes and breeds, ill-sorted and badly packed, making good hatching an impossibility."

NEW HERD.

THE Peabody-Wall Company have purchased the Lugo Ranch, Lugo Station, Santa Ana Electric Line, from the Sterling Milk Company, and are engaged in breeding thoroughbred Jersey cows and Berkshire hogs. Their strain includes the best in Southern California. They already have some young stock for sale, as will be noticed by reading their advertisement, page 339.

Maier Packing Co.'s New Plant
Finest in the West. Referred to on this page.

A CARD OF THANKS.

We desire to thank the numerous readers of the California Cultivator who deal with us, for their many evidences of good will shown us during the past few weeks.

The broad publicity given to the indiscreet affairs of a former employé of the house has been most distasteful to us and calculated to injure a firm with less reputation, as we do not consider such notoriety valuable advertising. But we are glad to say that our business has gone steadily on meanwhile, and many improvements under way are being carried to completion. Our factory is being greatly enlarged, and several new catalogues are now in the works. Two of them, our Gun and Ammunition catalogue and our Tent and Camping Goods catalogue will be ready for distribution within 60 days. Each of these will be the handsomest of its kind ever issued in the Southwest, and will add greatly to our circulating library. A simple request for either of these will land it in your box postpaid.

Again thanking you, we remain,
Yours very truly.
The WILLIAM H. HOEGEE CO.

ROAST MUTTON.

The shoulder is the best piece to roast. Have the butcher remove the bones, leaving a pocket for bread dressing. Remove all the pink skin from the outside, then season with salt and pepper. Season the bread crumbs with sage, salt pepper and melted butter and milk. Place in the baking pan and bake in a moderately hot oven. The meat should frequently be basted with the meat liquor in the pan.

200-250 Egg Fowls | **WHITE WYANDOTTES** | Eggs Ready Now

10 Highest Scoring Birds, Seattle, 1907
Winning over the cream of the North Coast

Four Firsts and all the Big Specials at San Francisco
Pronounced by the National Expert Judges equal to any in the United States

1907 Catalogue and Mating List Free.
Eggs and Stock. Clears Replaced. Expressage Paid.

CAPITOL AVENUE POULTRY FARM
A. L. R. MANTZ **Rural 21, Box 98k** **SAN JOSE, CAL.**

WHITE MINORCAS

Won at Alameda Poultry Association Show, 1907: 1st Cock, 1st Hen, 1st Pullet

EGGS FOR SALE—$2.50 per Setting of 15; Two Settings, $4.50; Incubator Lots $10 per 100.

A Few Cockerels For Sale. Prices on application to

Coulson Poultry and Stock Food Company
Petaluma, California

Germain Seed Co., Los Angeles, Distributing Agents for Southern California

For Sale By

Eggs

El Oro Poultry Farm

Hens
Pullets
Cocks and Cockerels

H. H. Holland, Prop.
Fresno, California

White and Brown Leghorns, Barred Rocks, Black Minorcas, Blue Andalusian and Bronze Turkey Eggs, $1.00 to $3.00 per setting of 15 eggs.

Incubator lots from $4.00 per hundred upward.

Stock for sale. Prices named on application. Order now and get off your early hatches.

Black Minorcas
Exclusively

Winnings at the great Los Angeles Show, January 1 to 5, 1907:

Cocks—1st and 3rd. ***Cockerels***—1st, 2nd and 3rd
Hens—1st, 2nd, 3rd, 4th and 5th.
Pullets—1st, 2nd, 3rd, 4th and 5th. ***Pens***—1st and 2nd.
Cup for Best Minorca Male, also Cup for Best Display.

Plenty of Fertile Eggs For Sale.
Send for our new illustrated catalogue.

Perham & Wheeler
R. F. D. No. 123 **Lordsburg, Cal.**

Mission View Poultry Ranch

White Wyandottes That Are Trap-Nested

Prize Winning, Large Egg Laying Strain. Won Nineteen Prizes in 1906!

Mammoth Bronze Turkeys **Lakenvelders**
Silver Laced Wyandottes

Mrs. C. D. Hubbard Box 282 San Fernando, Ca

INCUBATORS

1907 Los Angeles

"Model" Made by Chas. A. Cyphers
Best Hot Water Incubator
"Peerless" Made by Henry Albers Co.

Call and See Them or Send for Free Catalogue

315 S. Main **Henry Albers Co.** **Los Angeles**

THE BUFF WYANDOTTES.

For an all-around bird there is nothing that excells the Buff Wyandottes. They have utility, fancy and beauty combined. Their color is pleasing to the eye and does not soil and yet they are not too dark to be attractive. They, of course, have all the other good points of the Wyandottes.

A few years ago one didn't hear much about the Buffs on our coast, but I notice of late that they are coming to the front and run a close second to the Whites and are in great demand. The new standard demands that the color be a rich golden buff. The fancier is breeding to get that soft even buff characteristic of high-class breeding and free from any foreign color whatever. The under color must be a rich color of a little lighter shade. A breeder sometimes makes the mistake of mating birds of too great a contrast in color and the result is birds of mottled or mealy appearance. Therefore to get the best results one must choose birds as near standard color as possible and mate them with males a very little lighter than the females.

From a 94 1-2 point hen very even in both under and surface color and a little dark in the tail, mated to a 93 1-2 point cockerel near standard color, but a little lighter than the hen, I got some very fine solid buff pullets with absolutely no foreign color. These pullets are now mated up with a suitable male and I am expecting great results from them this year.

I hatch a good many chickens, but cull very closely, selecting the most vigorous birds that show good points, such as stocky yellow legs, good comb, rich bay eyes and even color. In mating up my birds I select the best layers that score the highest and my yards contain only my best birds and all are good layers.

Pens should contain only birds that are well up in standard requirements or our stock will go backward instead of forward.

It is not quantity we are after, but quality, and a few good birds will pay better than twice as many half good ones; and we mustn't forget when breeding for color and shape that it's quite as important to produce good layers. I find a ready market for stock and could sell a great many more eggs than I am getting right along.

I am predicting a great future for the buffs and feel that they are the coming bird. I am a member of the American Buff Wyandotte Club and I'm glad to see a great many of our western breeders are coming in.—Arthur W. Huskins.

HE FOOTS THE BILL.

One time a merchant put up a blackboard in his store and asked his customers to write their names on it and opposite tell what they were doing for humanity. A lawyer wrote, "I plead for all." A preacher wrote, "I pray for all." An old farmer walked up and wrote his name, scratched his head a while and then wrote, "I pay for all."

Here's to the stork,
A most valuable bird,
That inhabits the residence districts.
He doesn't sing tunes,
Nor yield any plumes.
But helps out the vital satistics.

You can show a Boston man, but you can't show him much.—Missourian.

A. J. LITTLE

White Plymouth Rocks
Exclusively

The Largest Flock of Prize Winning Birds in the West

Including Wm. M. Humphrey's Entire Flock of Prize Winners. Birds in my yards won at Los Angeles, 1907, the largest show ever held in the West,

23 Out of a Possible 25 Prizes

Also at San Diego, Portland, Cincinnati, San Francisco, Fresno, Oakland, Hanford and other points, under as many different judges.

50 Males
500 Females

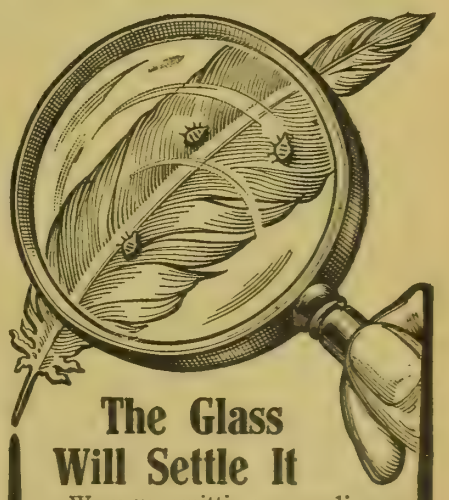
Will sell Singles, Pairs, Trios or Pens.

EGGS
$2.50 for 15, $10.00 for 100

From special matings containing my very best prize-winners, $10 per 15. Correspondence carefully answered. Visitors welcome.

A. J. Little
Monrovia, Cal.

Get off at Mayflower, walk north two blocks, thence west two blocks to ranch.



The Glass Will Settle It

Wage unremitting war on lice, if you would keep hens with either pleasure or profit. Those little specks so like the color of the feathers, are the gray body lice that suck the very life blood from the hens and make them almost wholly unprofitable.

Instant Louse Killer

will rid the hens of these dreadful parasites thoroughly, quickly, and with the least trouble to yourself. Kills lice on poultry, horses, cattle, sheep ticks, bugs on cucumber, squash and melon vines, cabbage worms, slugs on rose bushes, etc. It is a perfect disinfectant and deodorizer. Look for the word **"INSTANT"** on the can—then you have the genuine.

1 lb. 35 cts. 3 lbs. 85 cts.

If your dealer cannot supply you, send your order to us.

MANUFACTURED BY
DR. HESS & CLARK,
Ashland, Ohio.
THE PETALUMA INCUBATOR CO.,
Petaluma, California.
Pacific Coast Distributors.

Anconas Lay Anconas Pay
Imported and Domestic Matings Now Ready. Surplus Stock All Sold. Let us book your order at once for future delivery. **L. L. Viereck,** Pres. Ancona Club of America, **Albany, Oregon.**

LINERS

Liner Advertising

Advertisements in Liner Column 1¼ cents per word. Eight words to a line. No advertisement taken for less than 25 cents.

DUCKS.

INDIAN RUNNER DUCKS—A WORLD beater for producing Eggs. Pure strain. $1.00 for 13; $5.00 for 100. Black Langshans, Prize Pen. $2.00 for 13. F. M. BENDER, Corona, California.

FOR SALE—INDIAN RUNNER DUCK eggs from choice stock, $1.00 per setting of 13; incubator lots at short notice at $5.00 per 100. F. J. QUANT, Madera, California.

EGGS FOR HATCHING.

EGGS FOR HATCHING—S. C. RHODE ISland Reds and heavyweight Black Minorcas, $1.50 per 13. MRS. L. M. RUCKER, R. F. D. 8, Chino, Butte Co., Cal.

GOLDEN LACED WYANDOTTES. Blue Ribbon winners wherever shown.— At Oakland 1907—won four, first —three, second and two third premiums.—Eggs from prize-winners $1.50 and $2.00 per 15. Fifty choice birds $1.00 to $2.00. Eggs proven infertile will be replaced if returned to me at buyer's expense. J. P. ENGLISH, Arroyo Grande, Cal.

ORPINGTONS AND REDS; PEKIN DUCKS—12 prizes on 16 entries, also silver cup, at "Breeder's Show" 1907. Eggs now ready, can't help but hatch winners, we breed them that way, fifteen years' experience counts. Our stock are great layers, rapid growers, top market quality, we guarantee satisfaction. GOODACRE BROS., Box 45, Compton Cal.

McKINLEY POULTRY FARM—BREEDERS of buff and white Wyandottes. Member American Buff Wyandotte Club. Golden Seabright and Pyle Game Bantams. Eggs $3.00 and $2.00 per 13. Take San Pedro Interurban car to McKinley, first house north. BOX 11, R. F. D., Gardena, Cal.

BLUE ANDALUSIANS—I did not exhibit this year but have better stock than ever. Eggs for hatching, $2.50 per 14. Incubator lots $7.50 and $10.00 per 100. No fear of inbreeding as we have three strains. MRS. T. R. GRIFFITH, 3111 Walton Ave., Los Angeles.

WHITE LEGHORN AND WHITE WYANdotte eggs for hatching, from extra choice, trap-nested, bred-for-eggs stock. Leghorn eggs $5.00 per 100; White Wyandotte eggs $1.00 and $1.50 per setting, $6.00 per 100. F. T. McLAUGHLIN, Gardena, Cal.

BLUE RIDGE POULTRY YARDS, W. H. Brown, Prop., 128 Ave. 32, Los Angeles, Cal. Breeder of Blue Andalusians. Won more first prizes than all our competitors combined. All specials went to our strain. Eggs $1.50 and $2.00.

MY WINNINGS AT THE LATE BREEDERS' Show on Rose Comb Black Minorcas were three prizes from four entries. Eggs two dollars per fifteen. Correspondence solicited. M. E. BROWN, Box one hundred, R. R. No. one, Los Angeles, Cal.

HAVE PURCHASED FROM W. A. STEWart the pen of Black Orpingtons that won 1st at Dairy Show, London last year, 1st at Breeders' Show, Los Angeles 1907. Will sell a few settings. ROSS & TATE, Altadena, Cal.

S. C. WHITE LEGHORN EGGS FROM THE bred-to-lay Blanchard strain. Large birds. $1.00 for 15; $6.00 per 100; Free city delivery. C. M. GIBBS, R. F. D. No. 4, Los Angeles, Cal. Phone W. 591.

FOR SALE—PURE BRED STOCK, S. C. White Leghorn Eggs. Large eggs, great layers, eggs for hatching only. $1.50 per 15; $6.00 per hundred. RICHARD POWERS, Anaheim, Cal.

FOR SALE—EGGS FOR HATCHING, FROM Buff Leghorns and Barred Plymouth Rock fowls, good color, fine layers. Eggs $1.00 to $1.50 per 15. WM. C. PARKER, No. 111 Pacific Ave., Santa Cruz, Cal.

35c PER DOZEN; S. C. WHITE LEGHORN eggs for hatching, fine stock, large eggs, 95 per cent. fertile. Carefully packed. MATT MARTIN, R.F.D. G street, Ontario, Cal.

BUFF ORPINGTONS—EGGS FOR HATCHing. $2 per 15; L. C. Black Minorcas, $1.50 per 14. $8 per 100. Also S. C. Whits Leghorns, $1.00 per 15, $4 per 100. SCOTIA POULTRY FARM, Fowler, Cal.

FOR SALE—EGGS FROM TWO PENS OF extra fine White Plymouth Rocks, $2 per 13. FRANK H. THOMAS, 1820 Hobart Blvd., Los Angeles, Cal.

FARM LAND.

RICHEST PRAIRIE LAND IN NORTH America. Yielding greatest average crops known of wheat, oats, barley, sugar beets. $15 to $25 per acre. Easy terms. Water sure. Free fare on cetain conditions. Address W. R. GILSON, 121 E. 4th street, Los Angeles, Cal.

HORSES.

IMPORTED CLYDESDALE AND HACKNEY Stallions. I sell better stallions for less money than any other man in the State. Can sell you a good stallion for $1000. WM. McKIE, 407 Aliso street, Los Angeles, Cal.

POULTRY FOODS.

WEST COAST POULTRY FOODS AND REMedies are the best made and, quality considered, the cheapest. If your dealer doesn't sell them, send to us. Booklet free. Send us names of 12 persons keeping poultry and we will send you free "The Poultry Manual" by those high authorities F. L. Sewell and Ida E. Tilson, profusely illustrated. WEST COAST STOCK FOOD CO., 818 San Fernando St., Los Angeles, Cal.

RANCHES FOR SALE.

FOR SALE OR RENT—COMPLETE DAIRY ranch in Sunny Stanislaus; under Modesto irrigation system; 5 miles from Modesto; 3 miles from railway station. 160 acres in alfalfa, 85 head graded dairy stock, 5 head horses, dairy buildings, house and large barn, separator, etc. Splendid income. Telephone and rural delivery. Write for terms. Address H. N. CHAPPELL, Modesto, Cal., R. F. D. No. 4, Box 25.

LIVE STOCK WANTED.

WANTED TO BUY THIRTY HEAD OF first-class dairy cows. Address J. A. WALTON, 435 Brookside Ave., Redlands, Cal.

POULTRY.

HARRISON'S R. I. REDS AND WHITE Rocks. The best out West; 12 awards at Poultry Breeders' Show, including 1st and 3rd Red cockerels, 1st and 2nd Red pullets in a class of 36 pullets; White Rocks 1st pen, 1st and 3rd pullets and 3rd cock. New circular. Eggs $2.00 for 15, $5.00 for 50, $8.00 for 100. LAKE AVENUE POULTRY YARDS, 757 N. Lake Ave., Pasadena, Cal.

COLUMBIAN WYANDOTTES, THE FANCY and Utility Fowl. Eggs and stock for sale. Eggs from Pen No. 1, headed by First Prize Cock at late Los Angeles show, $5 for 13; No. 2, $3. Also Black Tailed Japanese Bantams, $4 per 13. Frank J. Ironmonger, Hollywood, Cal.

SINGLE-COMB WHITE LEGHORNS, FINE white, large, birds; good layers. Hatching and shipping chicks. Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER, Ontario, Cal.

BUFF ORPINGTONS—I WILL HAVE A few settings of Buff Orpington eggs to spare from best stock obtainable. From St. Louis and California prize winners. $3.00 per 12 eggs. MRS. N. F. MORSE, Fullerton, Cal.

FOR SALE—INDIAN RUNNER DUCK EGGS, fine stock, 50c per dozen; $3.50 per 100, 80 per cent fertile. JOHN W. LYON, E. Palm Ave., Gardena, Cal.

HOMERS FOR SQUAB BREEDING. GUARanteed mated birds. Prolific breeders, $1.50 a pair. EMMA V. WEATHERS, Nipomo, Cal.

CHICKENS FOR SALE.

SPECIAL SALE—WILL SELL CHEAP 1ST, 2nd and 3rd prize Barred Rock cockerels at late breeders' show, these are grand birds and will give special price if taken at once. Also eggs. Write your wants. FRED ESPE, 4425 South Main street, Los Angeles, Cal.

TREES.

FOR SALE—4000 VALENCIA AND 1000 W. Navels; one year buds on three year roots, clean and vigorous; buds taken from bearing trees. F. E. CHAPMAN, R. F. D. Box 34, So. Craig Ave., Pasadena, Cal.

FOR SALE—MISSION, BLACK SPANISH, and Taft's Kadola Figs; fine trees at 25c and 35c. Order quick if you want them. H. L. BAUER & SONS, 737 South Spring Street, Los Angeles.

FOR SALE—20,000 EUCALYPTUS, READY for April planting. Write for prices. A. L. HURTT, San Bernardino, Cal.

WATERMELON SEED.

FOR SALE—FINE RED CHILLEAN WATER Melon seeds. Price 50c a pound. WILLIAM BRITTON, Burbank, California.

LIVE STOCK.

FOR SALE—1 THOROUGHBRED MARE, 8 years old (registeher) 15 2½ high, black, sound, rides, drives single and double. Also 1 Standard Electioneer mare coming 5 years old; fairly well broken; single and double; 16 hands. Brown, sound; has quite a burst of speed. WM. TOPHAM, R. F. D. No. 21, San Jose, Cal.

LAWNS.

LAWNS GROWN FROM LIPPIA REPENS require water only once a week. Can go thirty days without injury. Rooted plants, $2.75 per 1000. SOUTHARD NURSERIES, Redlands, Cal.

FLOWERS.

SOUTHARD'S IROP GAILLARDIS.—A wonder in size of flowers and diversity of beautiful volors, very hardy and blooms all the time. Plants 75 cents per doz. 36 Carnation plants $1.00. The SOUTHARD NURSERIES, Redlands, Cal.

GRAPE VINES.

MUSCAT GRAPE VINES ESPECIALLY selected for arbor planting or climbing on trellis. 6 strong plants, $1.00. SOUTHARD NURSERIES, Redlands, Cal.

FEMALE HELP WANTED.

WANTED—LADY TO SELL LATEST neckwear supporters. Money making proprosition. MERRIL & CO., 426 Mason Bldg., Los Angeles, Cal.

El Casco Poultry Yards

200-Egg Trap-Nested Wh. Wyandottes
Egg, $1.50 per 15

S. C. White Leghorns
Large hens. Large white eggs. Eggs, $1.00 per 15, $5.00 per 100. High fertility guaranteed.

J. F. GOETTING, El Casco, California

East Side Poultry Yards

Have pure bloods. Eggs for hatching. Hatching chick a specialty.

Barred Rocks **Buff Orpingtons**

Prices Right

E. J. Look
16 Hancock St. **E. San Jose, Cal.**

COLUMBIAN WYANDOTTES

Won 1st Cock, 1st Hen, 1st Cockerel, 1st Pullet, 1st Pen and all Special Prizes at San Jose Show in competition with birds from Southern California. ***Eggs, $2.50 per Setting. Stock For Sale.***

R. Walker Mantz, Rural 21, San Jose, Cal.

WYANDOTTES

WHITE **BUFF**

Eggs from special matings only, all eggs sold are from matured stock good size and strictly fresh. This stock is scientifically bred for the past four years and you will get more good even pullets and cockere's from these eggs than any other on the coast. Fertility and satisfaction guranteed.

A. W. HUSKINS
713 Waterloo St. **Los Angeles, Cal.**

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

To Candy Kumquats.

Please inform me in your paper, how to preserve or candy the little kumquat orange.—H. E. S., Nordoff.

While I have not been fortunate enough to have kumquats to handle I have many times preserved and glaced small oranges and limes. I should not hesitate to use the same formula for kumquats. It is as follows: Wash the fruit, wiping it dry with a clean cloth. Weigh the fruit carefully, and place it in a wire basket, one used for frying will answer.

Place the basket of fruit in a kettle of cold water, to the cold water add a heaping tablespoonful of baking soda for each gallon of water contained. Bring to a boil and then set where it will simmer for twenty minutes, when the peeling looks cooked it is done, for it is not desirable to cook the pulp of the fruit or it will not stand up firm under the sugaring.

Lift out the wire basket and plunge it at once into cold water, changing the water as it grows warm. This is technically known as mordenting with soda it keeps the fruit from growing dark. It is often used in making marmalade from oranges and lemons.

Weigh out as much sugar as the fruit weighs, put on three-fourths of the sugar with as little water as will dissolve it, boil and skim it carefully.

The French makers put one pound of glucose for every nine pounds of sugar used. A preserve made with this amount of glucose will never crystalize and grow hard.

Boil the syrup for fully ten minutes then skim carefully, stand where it will keep hot. Drain the cold water off the fruit and place it in shallow pans not more than two kumquats deep.

Pour the hot syrup over the fruit and cover with a cloth or board so the heat will be held for a couple of hours then remove to a cold place and uncover the fruit, to have it as cold as possible before next morning. The principle of forcing the sugar into the fruit is based on the changes of temperature that swells and shrinks the fruit.

The next morning pour off the syrup and put it on to boil again, when hot add the rest of the sugar, boil five minutes, skim and pour over the fruit while hot, cover as before. The next morning cut one of the kumquats to see if the sugar has not nearly penetrated to the center, if it has almost reached the center the fruit is ready to be finished at once. If it has not repeat the boiling of the syrup the next day.

When the fruit is ready, the syrup is put on the fire to boil again. The fruit is carefully packed into either glass jars or tin cans by hand. When the jars or can are full spring in the top some little sticks, orange wood peeled or any tasteless wood, these are to hold the fruit down in the jars.

If glass jars are used, place a folded cloth in the bottom of the wash boiler, put the jars having the cold fruit in them on the cloth in the boiler, put in a dipperfull of hot water into the boiler then fill a little syrup into each jar, adding hot water on the outside from time to time as the boiling syrup is put into the jars. When filled rest the cover lighly on the jars and as soon as the syrup in the jars boils, lift them out and screw up. Keep the jars in a warm place out of draft, until next morning, then tighten the covers and remove to a cold place. In using tin cans this care need not be taken, they can simply be lifted from the boiling kettle, sealed at once and left until the next morning, then stand them upside down to see that they are tight. This fruit will keep unsealed, but will mold and may not be as wholesome as that that is air tight.

At any time glace fruit may be made from these by rolling them in dry sugar and placing them in a bed of sugar in a warm, not hot oven, for a short time.—M. E. S.

Sorghum Seed.

Will you tell me the value of Sorghum seed for poultry? Is it fat-producing or an egg food and how would it do for turkeys?—C. B. C., Poway.

Sorghum seed, Broom corn seed and Egyptian corn have almost the same nutritive value. They can be fed to both chickens and turkeys with the same satisfactory results. One year when on the farm I had several tons of Broom corn seed, which was left where the threshers worked and the fowls had free access to it and the green growing wheat they got through the moult early and laid all winter eggs galore, I never saw better laying and the turkeys did well on it.

Professor Jaffa in his most valuable bulletin (Farmer's bulletin 164) on poultry feeding gives as the nutritive value of broom corn and of sorghum seed both the same 1: 8.4 of Egyptian corn 1: 8.6. Sorghum seed is more fattening than wheat and less fattening than corn. If your fowls are on free range and have plenty of green food and animal food or milk, Sorghum seed will be an excellent food for them.

You should write to the Director Agricultural Experiment Station, University of California, Berkeley, and ask him to send you "Bulletin 164 on Poultry Feeding" then you can see just the right way to balance your rations.—Mrs. A. B.

Care of Turkeys.

I would like to ask a few questions about turkeys. You mentioned raising them in a brooder.

(1.) How warm should one have the brooder when the poults are first put in?

(2.) At the end of the first week what should the temperature be lowered to?

(3.) Our brooders are Cyphers, where should we hang the thermometers?

(4.) Is alfalfa meal necessary, or of any benefit, to little poults or to little chicks, if they have all the green barley they will eat cut fine?—A Subscriber.

The heat under the hover should be about 95. The reason I say "about" is, that on a very warm sunny day it might be a little lower, but should the outside temperature be cold or the weather damp and gloomy, it must be up to 95. for best results.

(2.) About 85., depending somewhat on the outside air and weather. Gradually lower the temperature till you get it to 70. or to 75. according to the weather.

(3.) There is a hole in the hover of the Cyphers' brooder for the thermometer to hang; keep your thermometer hanging there in its proper place.

(4.) No! Little turkeys require the succulent green, not the dried hay ground up. Give them lettuce chopped up at first with every meal; then either lettuce, dandelion leaves, onion tops chopped fine or cabbage; the tender leaves of beets, any green vegetables that you would eat yourself will do and also the green barley as long as it is succulent and tender, barley soon gets tough and hard and then is not suitable for little turkeys.—Mrs. A. B.

Sick Turkeys.

My turkeys are droopy; their droppings are as yellow as the yolk of an egg. They seem to drink an unusual amount of water, but won't eat anything. Have plenty of green feed, shells, grit, etc. Can you give me any light on the subject, as to cause, and treatment, and if there is any possibility of cure?—A Subscriber.

The symptoms you describe are very much like those of cholera. Send a

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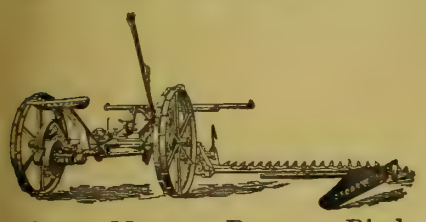

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postal to the Director of the Experiment Station, University of California, Berkeley, for the bulletin on "Fowl Cholera." Meanwhile I would advise your moving all those that are well onto fresh ground, keeping the sick by themselves; give them each one grain of calomel at night, followed by a 2-grain pill of quinine the following day, repeat the dose if necessary, and into the water of all of them (sick and well) put one tablet of corrosive sublimate to one quart of water. This is a dilution of 1 to 2000 parts of water. This will kill the germs in the water. Corrosive sublimate is very poisonous, so be careful not to leave the tablets where children or anyone can get them; also do not use a stronger solution. The bodies of fowls that die of cholera should be cremated as the disease is very infectious.—Mrs. A. B.

Neglected Oranges.

I have a small orange grove of seedlings that are probably 12 to 15 years old, and which, for the last three or four years have been neglected and the oranges are very small. Please tell me what to do with them in order to bring them back. I have heard there was a good mineral fertilizer. Can they be successfully budded or grafted with navels?—A. C. W., Stockton.

Use plenty of stable manure with about one pound of sulphate of potash and four pounds of acidulated bone per tree twice a year.

Make one application now and one in the first part of July. In the fall, about October first, plant about 40 pounds of vetch per acre. Get this to growing as soon as you can, irrigating before planting and leave the grove furrowed out for irrigating again and let it remain so till the late winter plowing when you can repeat the commercial fertilizers, spreading it on top of the green stuff and plow all under at the same time.

Your trees can readily be transformed to Washington navels by following the directions given in the Cultivator of March 7th, 1907.

Spray and Dip.

Last summer I found a receipt in one of your articles for spraying henhouses, I used it to good advantage, but have misplaced the receipt, and cannot remember the mixture exactly. It was composed of coal oil, carbolic acid and soap, with a certain proportion of water; if you will kindly send it to me I will appreciate it.—C. W.

I gladly send you the receipt for it is excellent. I have used it for ten years or more; it will kill fleas, lice, mites or any insect pests in the heneries. It will also thoroughly disinfect the premises from infectious diseases and if used as a dip for hens in warm, sunny weather will rid them of lice and will assist the moult.

Dissolve one pound of hard soap (or soap powder) in one gallon of boiling water, remove from the fire and add immediately one gallon of kerosene and one pint of crude carbolic acid. Churn or agitate violently for twenty minutes or until you want to use it. If the oil and water separate on standing, then the soap was not caustic enough. Add to this ten gallons of water.

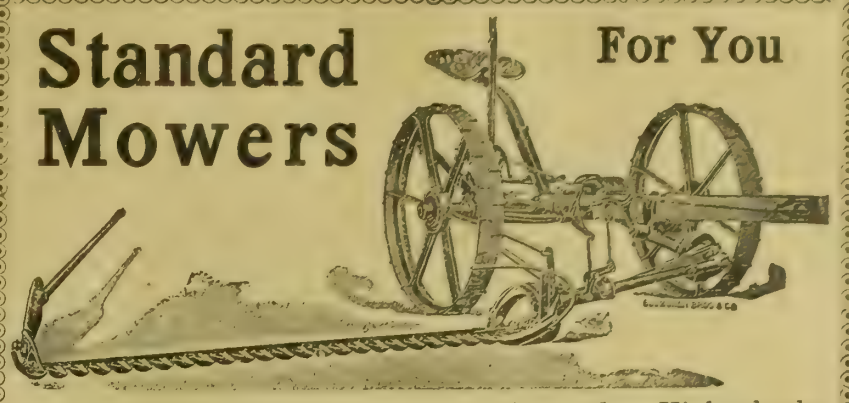
I keep the stock solution on hand; dip out a quart and add to it ten quarts of water and use it for spraying the houses once every three weeks in summer and every month in winter. Putting it on hot in summer and slopping it well into dark and dusty corners will kill fleas, which are exceedingly troublesome on sandy soils in this part of the country.—Mrs. A. B.

Sick Turkey.

Mrs. W. A. has a fine turkey gobbler that is suffering with running of the bowels, don't eat and is quite droopy. Will you kindly suggest some remedy; it is a valuable turkey.

Give the turkey a liver pill, such as you use in your family or a grain of calomel. Follow this with a grain of quinine given every night for four days. Feed rice boiled in milk adding to every pint one tablespoonful of ground cinnamon. If Mrs. W. A. had written direct to the writer she would have had an immediate reply. Quick treatment is needed with turkeys.—Mrs. A. B.

Standard Mowers For You



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Poultry Breeders Association, 1907

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2nd Cock	2nd Cockerel	3rd Hen	2nd Pullet	3rd Pen
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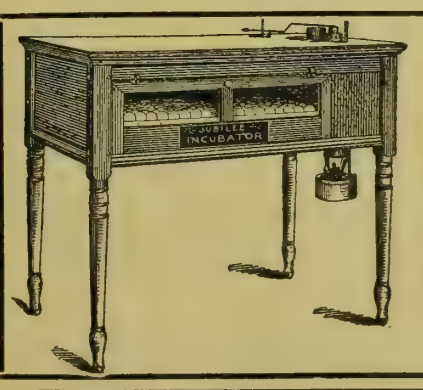

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A Fine Stock of Superlative Raspberry, also Fruit Trees and Vines of All Sorts. Both Phones.
P. S.—See Article in Cultivator on Page 550, issue of December 6th.

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The Vegetable Garden

By ERNEST BRAUNTON

VEGETABLE SEED.

GOOD crops are grown from good seed, and the gardener cannot run the risk of failure by using doubtful seed. There are but few vegetable seed that the gardener can afford to grow for his own use. In fact but few gardeners are versed in the art of the growth and selection of seed.

The reliable and up-to-date seedsmen are, as a rule, as careful in the selection and breeding of the different varieties of cultivated plants as are the breeders of live stock. Considerable knowledge and skill are necessary for the successful improvement and perpetuation of the better qualities of a variety, and the seedsmen employ experts to grow many of their seed, and constantly endeavor to evolve something better by selection and cross-breeding.

Within the past few years varieties of very near all of our common vegetables and farm crops have been improved or introduced that possess qualities superior to the varieties considered best a few years ago. The average gardener or farmer does not fully understand either the principle or the practice of growing good seed, hence much of the common complaint of seed "running out." Experience has taught that certain seed grown in certain localities produce well, and vice versa. Some seed produce better when grown in the latitude or altitude in which they are to be planted, while others are better grown further north or further south. Watermelon, muskmelon, cucumber, squash, corn, okra, Lima bean, pepper, eggplant and tomato seed should be grown under climatic conditions as nearly similar as possible to the condition prevailing where the seeds are to be planted.

On the other hand cabbage, cauliflower, beet, carrot, turnip, parsnip, bean, pea and lettuce produce more satisfactory results when the seed are grown further north, while French grown radish seed are considered superior to those grown elsewhere. Reliable seedsmen now recognize these and other important facts, and grow their seed and fill their orders accordingly. Practically all of our cultivated plants have been improved or bred up to form and substance and other desirable qualities which are superior to those possessed originally by the plants, and they have a natural tendency to revert to their original character, hence the greater care necessary for the continuation of these artificial or evolved characteristics, and for their improvement.

Again, the cross-fertilization or "mixing" of plants will take place at considerable distance through the influence of insects and winds, and great care is necessary in planting related varieties to have them sufficiently removed from each other to prevent this crossing, or hybridization, as the case may be. Many seedsmen now take great pride in their "thoroughbred" or "pedigree" seed. These pedigree seed are about as important to the gardener as the pedigree cow to the dairyman.

PLEASURES OF FRUIT GARDENS.

The people of this country are notably a fruit-loving and fruit-eating people. Notwithstanding this, however, fruit culture has grown to be classed among the specialties, and few persons who consume fruit are actual growers.

The possibilities in fruit culture upon restricted areas have been very generally overlooked, with the result that many persons who own a city lot, a suburban home, or even a farm, now look upon fruit as a luxury. This can all be changed, and much of the land which is now practically waste and entirely unremunerative can be made to produce fruits in sufficient quantity to give them a regular place upon the family bill of fare and at the same time add greatly to the attractiveness of the table and healthfulness of the diet.

HOME FRUIT GARDEN.

The home garden is always the forerunner of commercial development, and even in those localities where climatic and soil conditions are adverse to such industries in a commercial way the home fruit garden of the enthusiastic amateur is certain to be found.

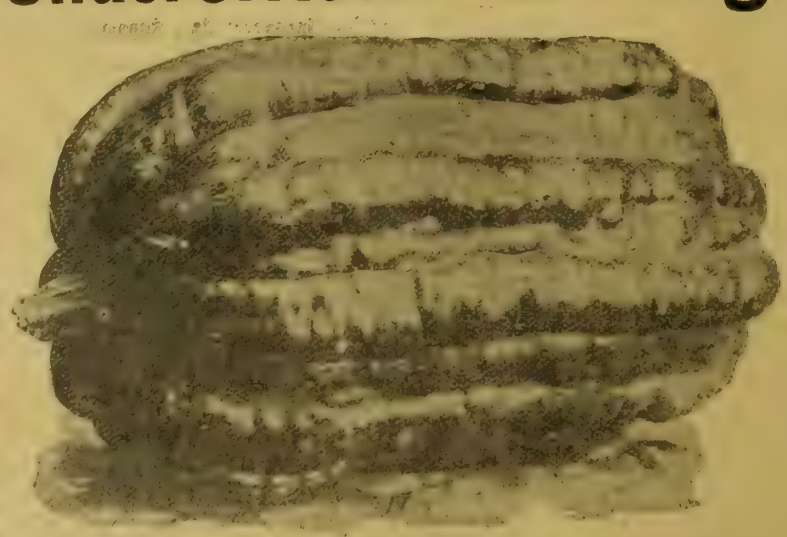
All the success attained today by the fruit interests of the United States has grown out of the persevering efforts of a few men whose home fruit gardens served not only as testing stations for determining the fitness of given sorts for new and untried localities, but they were the propagating grounds from which sorts of the highest quality and greatest commercial value originated.

DOWNY MILDEW.

Downy mildew, the most destructive of all cucurbit diseases, is especially injurious to cucumbers, but also attacks melons, squashes, pumpkins, gourds and other related vines.

Appearance.—The first indication of downy mildew in the field is a yellowing of the older leaves in the center of the plant. Faintly defined angular spots bordered by the veins will then be detected.

Chas. C. Navlet Co's Bug Proof Squash



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In order to reduce our nursery stock, we offer 10 different kinds for $2.00 and, as a special inducement to assure quick response, we will give you free of charge a package of Taylor's seeds—vegetables and flowers assorted, enough to fill your garden. Send $2.00 today and receive 10 rose plants (3 years old) and this big assortment of seeds

F. Gilman Taylor Seed Co.
Box 9 Glendale, Cal.

The Ornamental Garden

By ERNEST BRAUNTON

ROSES.

THERE is no flowering shrub or plant so generally satisfactory as the Rose.

As single specimens scattered here and there over the grounds, they form graceful shrubs.

Planted close together along walks or borders, they can be trained into exceptionally beautiful flowering hedges.

Allowed to run riot over stumps, rocks, old fences, they soon cover and transform unsightly objects into attractive bits of scenery.

Massed together, they can be used for figured plots and greatly enhance the effect of well-kept grounds, or, placed on edges of wild stretches of woodland, they form a striking foreground.

As veranda vines, the climbers form a mass of green and pink, or red, or yellow, or white, or a combination of colors, as desired—an effect that can hardly be approached with other climbers.

Planted in any form, they furnish a wealth of flowers at all seasons, if a judicious selection of varieties is made. And, for cut-flowers, Roses are universal favorites. How much more cheerful a house seems for having here and there, on tables, mantles, bureaus, vases of beautiful Rose-buds! How easy to decorate the parlor or garnish the dining-table for an evening entertainment if one has plenty of Roses!

It goes without saying that no one Rose is adapted to all the different purposes above named. It is not necessary that it should be. There are many different classes of Roses, and amongst the hundreds of varieties can be found those adapted to any purpose wanted.

BOTANY OF THE HOP.

There is but one botanical species of the hop (Humulus lupulus), but numerous varieties have been developed by cultivation. The hop is a climbing vine with harsh foliage and rough stems which twine from left to right with the sun. In a wild state the vines clamber up the stems of shrubs or over walls and fences. They frequently reach a length of 25 feet or more.

The hop is a perennial plant, the vines dying in autumn, and new ones springing up from the root in spring. It is dioesious, the male and female flowers occuring on different plants. Hops can be propagated either from seed or roots; the latter are almost universally employed in practical culture; the former are useful as a means of developing new varieties. In some parts of Europe, notably the best hop-growing regions of Bohemia, seedless hops are raised.

FERTILIZERS.

With shade trees and shrubs growth is often the prime object to be attained, and a fertilizer containing a large percentage of ammonia and a small percentage of potash is advisable. Five to six per cent. of ammonia, 7 to 9 per cent. of phosphoric acid and 3 to 4 per cent. of potash is about right.

With roses the object is different, for the flowers, as well as growth, are wanted, and flowers are to a rose-bush what fruit is to a fruit tree. Consequently, a fertilizer containing a good percentage of potash is advisable. About 8 to 10 per cent. of potash, 7 to 9 per cent of phosphoric acid and 3 to 4 per cent. of ammonia will answer the purpose admirably.

GROWING EUCALYPTS.

Noting some questions your subscribers have asked regarding the growing of Eucalypts, I think I will give you my experience, although it will not apply to all sections of the state. My present plantings are close to nine hundred thousand trees, none over three years old, and were all grown by me from native and imported seed.

I do not irrigate, and no water is nearer than thirty feet from surface. The land is rolling mesa, from four to six hundred feet above sea level, sandy and adobe, but no alkali. My first plantings were Tereticornis (seed obtained from Hon. Ellwood Cooper) rostrata, diversicolor, corymbosa, corynocalyx (seed collected near Los Angeles city).

All have done well, except the diversicolor and corymbosa. Shall not plant these two species again, although I would do so if I had damp land, or could irrigate for two years. My next plantings were E. tereticornis, Linaris Nobis, a species that grows unusually tall and straight, only a few to be found in California. I only know of nine trees and from these I got my seed. E. gomphocephiael (Ellwood Cooper seed), E. Sieberiana, all have grown splendidly and are twenty to thirty feet in height.

My next planting has been E. tereticornis (Ellwood Cooper seed), E. corynocalyx, E. rostrata, E. Bosistoiana, E. Maideni, and E. Dawsoni. The last named are new species, never before grown in California, and from the way they take to their new home, I shall plant 100,000 each this coming year. I shall grow altogether 600,000 trees for next planting, and I shall not stop until I have 4000 acres planted, using for that purpose four million seedling trees. I find that with economy it costs no more to have an acre of Eucalyptus up to two years of age than a crop of corn, and after that time they take care of themselves.

I plant my seed in July and commence planting in field about December 1st, and continue right through to March 15th. If I were fixed for irrigating, I would plant every month in the year. As you see from my letter, I plant no E. globulus (blue gum). I am growing the best species that will produce timber for technical uses.

I have made a study of Eucalypts, and believe I can be of use to your subscribers who need information as to the species suited to their localities on the coast. More in future letters.—Yours truly, Dwight Whiting.

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Commercial Smyrna Fig a Specialty

Seeds Plants Fruit Trees
Most complete stock in the West, embracing everything new of decided merit in both vegetable and flower seeds. Headquarters for Eucalyptus and other tree seeds. Full line of Fruit Trees and Ornamental Stock. *Write for Our 1907 Catalogue.*

Poultry and Stock Foods
We carry the most meritorious foods on the market, many being recommended by the U.S. Experiment Stations as containing the highest percentage of protein, which is the principal factor in egg production. *Write for Our New Poultry Catalogue.*

Germain Seed Co.
326-330 So. Main St.
Los Angeles, Cal.

Leonard Coates Nursery Co., Inc.

ROSES Splendid assortment, field grown, $2.00 per dozen.
CARNATIONS 5-inch Pots, field grown, $2 per doz.
A New Walnut. Eucalyptus, Acacias, California Privet, Etc.
No Fruit Trees This Season.
CATALOGUE of strictly Pedigreed Fruit Trees, Etc., will be issued during 1907. Orders may be booked at any time.

Morgan Hill, Santa Clara County, Cal.

SEED
OF THE BEST QUALITY
PLANTS AND BULBS
THE NEW SEED STORE
Everything Fresh and of highest Quality.
SEND FOR CATALOGUE
Morris & Snow
555 SOUTH MAIN ST.
Los Angeles, California.

Florists,—Nurserymen,
Etc., why pay $5 when $2.50 buys good
POTS POTS POTS
Formerly used by Chase Rose company, and are in good condition; 2-inch size only. Price, $2.50 per 1000, f.o.b. cars. No extra charge for packing.
Sample boxes containg 620 pots for $1.50 per box. Try a box
Write for price of 3x6 sash.
CHAS. HOWARD, 2121 Park Ave Riverside, Cal.

HURST SPRAYERS ON FREE TRIAL

No Money in Advance—pay when convenient. The "FITZ-ALL" fits on any barrel or tank. Sprays all solutions. Proven best and most durable. **Guaranteed Five Years.** *Brass Ball Valves Cylinder Plunger, Air Strainer Cleaner and 3 Agitators. 200 lb. pressure* A boy can operate it. After trial if you keep it—pay when you can. Wholesale price where no agent—Agents Wanted. Special Free Offer for first in each locality. "Spraying Guide" and full information FREE.
H.L. Hurst Mfg. Co., 17 North St., Canton, O.

We pay freight or deliver from San Francisco

Pacific Seed Co.
C. Bagnall, Prop.
GROWERS AND IMPORTERS OF
Grass, Vegetable and Flower Seeds
Tomato and Pepper Plants
609 J Street - Sacramento, Cal.
Send for Catalogue. Please mention the Cultivator

White Rocks The best kind and the best of the kind, Eggs until further notice, 15 for $1.25 or $5.50 per 100.
White Plymouth Rock Ranch
T. J. DAVIS, Prop. POMONA, CAL.

Catalogue 1907
Send For It
The most comblete assortment of Flowering, Bedding and Decorative Plants on the coast.
Mention California Cultivator When Writing
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Growing Department—Montebello, Cal.
Sales Department—Northwest Corner Ninth and Olive Streets, Los Angeles, Cal.
Mail Address, P O. Box 484

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SOUTHERN PACIFIC

May be arranged so that you may travel by way of

New Orleans and the Sunset Route

San Francisco and the Ogden Route

Portland and the Shasta Route

Enjoying the balmy air of the South or the cool and bracing air of the North.

Personally conducted excursions every day from Los Angeles via all routes without change to principal eastern points.

City Ticket Office:
600 S. Spring St., cor. Sixth

Southern Pacific

Malthoid Roofing

Covers the finest buildings in Los Angeles, where for a number of years no building is considered properly built until it is covered with a Malthoid roof.

Write for free booklet.

The Paraffine Paint Co.

Los Angeles Office
313 North Los Angeles Street

BROOKS' NEW CURE

Brooks' Appliance. New discovery. Wonderful. No obnoxious springs or pads. Automatic Air Cushions. Binds and draws the broken parts together as you would a broken limb. No salves. No lymphol. No lies. Durable, cheap. Pat. Sept. 10, '01.

FOR RUPTURE

SENT ON TRIAL.
CATALOGUE FREE.
C. E. BROOKS, 330 Brooks' Bldg., MARSHALL, MICH.

BALFOUR, GUTHRIE & CO

IMPORTERS OF
THOMAS PHOSPHATE POWDER
AND
NITRATE OF SODA
San Francisco Fresno Los Angeles
WRITE FOR PAMPHLET AND PRICES

When writing advertisers mention Cultivator

The Produce Markets

Los Angeles Markets

LOS ANGELES, March 27, 1907.

The butter supply since Monday morning has been much heavier owing to the arrival of a large shipment by boat from the north. The receipts posted on the board of the Los Angeles Produce Exchange this morning were 45,644 pounds, nearly twice the amount needed to meet the consumption for one day, but this was not at all excessive at this time, owing to the irregularity with which the supply has been coming in. Dealers easily found a place for all the surplus of one shipment in filling back orders.

Valley Creamery	67½
Coast, fy,	60
Cooking	20

Cheese

The cheese market is firm on account of small receipts and owing to the firm condition of the cheese market in the East. Prices of cheese today are several cents higher than at this time a year ago.

Cal. Young American, per lb.	21
California Anchor	20
Cal 3-lb. hand	21
Northern	18
Domestic Swiss	22
Imported Swiss	30

Eggs and Poultry

There was no change in the price of eggs. The market is firm due to an increased demand for Easter, which is augmented by the cold weather.

Eggs, local, per doz.	23
Northern Candled	21
Fresh Eastern	18

The following are average prices which dealers pay to producers for live weight:

Hens, per lb.	16
Young Roosters, per lb.	21
Fryers	22
Broilers, per lb.	24
Old Roosters	8
Turkeys	17
Geese	15@16
Ducks	15@16

Live Stock

The following quotations are f. o. b., Los Angeles. on all stock.

Hogs, 200 lbs.	7.75@8.00
Prime Steers.	5.50
Heifers	4½
Calves, per lb	5
Sheep, ewes, per head	5.50
Lambs, per head	4.00
Wethers	5.50

Potatoes

Salinas	2.50
Burbank, Local	2.25
Highland	2.25
Sweets, Yellow, per sack	5.00
Colorado	2.05
Minnesota	2.00

Vegetables

The supply of fresh vegetables was abundant this morning, especially of bunch goods, and demand was slow on account of the weather. Dealers will carry over a large amount of goods until tomorrow.

Asparagus, lb.	12½
Beets, per doz	40@60
Bell Peppers, Green, lb	5
Cabbage, sack	1.65
Chili Peppers, Green	30
Chili, Dried, per lb.	13½
Cucumbers, per doz	1.50@1.75
Cauliflower, per crate	2.25
Carrots, per doz.	40@50
Celery, per doz.	40
Egg Plant, per lb	15
Garlic per lb	6
Green Onions, doz. bunches	25@30
Lettuce, per crate	1.00@1.25
New potatoes, per lb.	5@6
Lima Beans, per lb	7@8
Onions, Aust. Brown, sk	135@1.50
Onions Y. Danvers	1.35@1.50
Parsnips, per doz	35@50
Rhubarb, per lb.	6@8
Radishes, per doz	15@20
String Beans, per lb	8@12
Sugar peas, per lb.	6@8
Turnips. doz. bunches	40@50
Tomatoes, per box	75@1.25
Wax Beans, per lb	16@18

Citrus Fruits

Lemons	2.00
Valencias	1.50@2.00
Navels	1.25@1.50
Grapefruit Seedless	2.00@2.50
Grapefruit seedlinggs	1.25@1.50

Fresh Fruits

Strawberries are arriving more freely and prices are lower, particularly for the best grades that arrive. Fancy stock did not bring over 10c a box this morning and the bulk of the supply sold from 8 to 9 cents.

Apples, Bellefluer, per box	1.50
Apples, Ben Davis	1.50
Strawberries	8@10

Dried Fruits

Evap. Apples, fancy, per lb	9
Apricots	18
Peaches	12
Pears	12@13
Prunes, fy.	5@8

Beans, Dried

Limas, No. 1, per cwt	4.75
Pink No. 1	2.65@2.75
Lady Washington	2.75@3.00
Small White	3.25@3.40
Black Eyes	5.50@6.00
Garvanzas	5.50@6.00
Lentils	12@15

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb. cans, lb.	7
Light Amber	6½@7
Comb, water white, 1-lb. fms	16
Light Amber	11

Nuts

Almonds, new, per lb	19@20
Peanuts, Virginia	7
Peanuts, California	6½
Walnuts, No. 1, S. S.	14@15

Hay

Barley, No. 1	14.50 @16.00
Barley, No 2	11.00@12.00
Alfalfa, Local, per ton	14.00@16.00
Plain Oat Hay, No. 1	17.00@19.00
Plain Oat Hay No. 2.	9.00@15.00
Wheat No. 1	14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, new, per cwt...	1.50
Barley (to producer)	1.00@1.05
Rolled Barley	1.35
Corn, per cwt.	1.40
Cracked Corn	1.45
Feed Corn Meal	1.50
Shorts	1.35
Bran	1.20
Oil Cake Meal	2.50
Cocoanut Meal	1.40

San Francisco Markets

SAN FRANCISCO, March 26, 1907.

Butter.

The receipts of butter, cheese and eggs are keeping up quite well from nearby sections by rail and boats. Eggs especially are coming in freely and extras today declined 1 cent per dozen. Butter advanced ½c per lb. for seconds and ½c for thirds. Fancy new cheese was ½c per lb. higher. All positions were firm.

California, ex. per lb.	33
California, firsts	31
California seconds	27½
Packing Stock	25

Cheese

New California, fancy	16
Cal. Young American, fancy	16

Eggs and Poultry

Fresh Ranch Eggs	21
Eggs, first, per dozen	20
Hens, per doz., small	5.00@5.50
Hens, large	600@7.50
Young Roosters, large	7.00@9.00
Young Roosters, small	4.50@5.50
Old Roosters	4.00@4.50
Fryers, per doz	6.50@7.50
Broilers, per doz	4.00@6.50
Ducks, young	6.00@8.00
Geese; per pair	2.00@3.00
Turkeys, per lb	16@19

Live Stock

Steers, No. 1	9@9½
No. 1 Cows and Heifers	6½@7
Hogs, 80 to 130 lbs	8@8½
Hogs, 250 to 350 lbs.	8
Calves, per lb	5@5½
Lambs, yearlings	6½@7

Potatoes

Salinas Burbanks ctl.	1.65@2.10
Rivers	1.75@1.90
Sweet Potatoes, ctl	2.75@3.00

Vegetables

Asparagus	5@7
Cucumbers, per doz.	1.00@1.25
Chili Peppers, Green lb	15@25
Egg plant per box	3.00@3.50
Green Peas, per lb	6@12
Squash, crates.	65@90
Onions, Red, per sack	75@1.00
Onions, Yellow	75@1.00
Peppers, Green Bell	25
Rhubarb, per box	1.00@1.50
Squash, crate	65@85
String beans	15@17
Tomatoes, Mexican	1.75@2.00
Wax Beans	15@17

Citrus Fruits

Oranges were in good demand and moving freely today. Only very choice were bringing over $2.75 per box.

Lemons	75@2.50
Navels	1.00@2.00
Seedlings	1.50
Grapefruit, seedlings	1.00@1.50
Grapefruit, seedless	2.00@3.00
Limes	3.50@4.00

Fresh Fruits

Strawberries are now due from Los Angeles and expected tomorrow. Eleven carloads of delayed Central American bananas arrived, divided between here and Oakland. They showed the effect of being long on the way, and much will have to go as peddlers' stock.

Apples, per box	1.00@2.00

Dried Fruits

Apples (evap.)	6@8½
Apricots, per lb	16@20
Figs, white	4@5
Prunes	3@4½
Peaches	10@12½
Raisins, seeded (1906)	3½@10
Thompson, unbleached	7½
Thompson, bleached	9@11

Beans and Seeds

The demand for Beans continues fairly steady, with the preference still in favor of the colored varieties.

Limas, No. 1	4.15@4.25
Pink	2.40@2.60
Large White	2.40@2.55
Small White	2.95@3.05
Black Eyes	5.00
Red Kidneys	3.75
Bayo	2.90@3.00

Hops

Desirable grades of California, 1906 crop, future delivery, 10@12 cents per lb, with occasional sales at 12½ cents.

Nuts

Almonds new	14@18
Peanuts, Viginia	6½
Peanuts, California	5½@6
W lnuts	15@16

Honey

Clear White Comb	16½
Amber	14@15
Extracted	5½@7

Hay

Alfala, local	8.00@12.00
Oat	15.00@18.00
Wheat, No 1	18.00@20.00
Wheat, No. 2	13.00@16.00

Grain

Wheat No. 1	1.32
Barley No. 1	1.23
Corn, small yellow	1.50@1.55
Corn, yellow	1.27@1.30
Oats, White	1.42@1.60
Oats, Red	1.30@1.60
Ground Barley, per ton	24.50@25.50
Bran per ton	21.50@22.50
Straw, per bale	45@75
Feed Corn Meal, per ton	31.00
Cracked Corn per ton	32.00
Oil Cake Meal, per ton	38.00
Cocoanut Cake, per ton	27.00
Calalfa Meal, per ton	21.00
Mealfalfa, per ton	21.00

Citrus Market

New York Market.

March 26.—The market is easier and lower on account of heavy offerings, though previous to today's sales the market has been exceptionally good for the past week. Weather partly cloudy and cool. Twenty-nine carloads oranges and one of lemons sold today.

NAVELS—	AV.
Sweetheart, Thompson's Riv. Ft Ex	3.65
Eagle, Thompson's Im Riv. Ft Ex	3.35
Sweetheart ex fy Riverside Ft Ex	3.45
La Mesa ex fy Riverside Ft Ex	3.05
Overland ex fy S B Ft Ex	2.55
Blue Globe ex fy Riverside Ft Ex	2.90
Riverside st Riverside Ft Ex	3.00
Red Shield ex ch A C G Ft Ex	2.20
Riversidt st Riverside Ft Ex	3.00
Sweetheart, Thom. Im. Riv. Ft Ex	3.20
Eagle, Thompson's Im. Riv. Ft Ex	3.05
Yankee Doodle Riverside Ft Ex	2.80
Gilden Rule ex ch Riverside Ft Ex	3.00
Rebecca ex ch S B Ft Ex	2.35
Parrot ex ch S A Ft Ex	2.40
Solano o r Stewart Ft Co	2.45
Geranium Thom. Im. C C U	2.80
Geranium ex ch C C U	2.90
Flamingo ex ch C C U	2.45
Bison st C C U	2.50
Partridge ex ch C C U	2.40
Old Baldy ex fy C C U	2.70
Lighthouse st C C U	2.65
Triangle ex fy Stranchan Ft Co	3.15
Pyramid o r Stranchan Ft Co	3.05
Squaw ex fy Patte & Lett	3.25
Heap Good fy Patte & Lett	3.25
Orchard Thom. Im National O Co	3.55

Bemis Plymouth Rocks

Barred and White

Prizes Won at Alameda County Poultry Association Show, Oakland—72 Regular Prizes and 7 Silver Cups. Can furnish best birds and eggs at reasonable prices. No incubators lots furnished.

Mrs. Florence E. Bemis, 1757 19th Ave, Oakland, Cal.

Beef, Blood and Bone Will Make Your Hens Lay

This is not a medicine but a high grade nitrogenous food. Write for free booklet, "How to make Hens Lay." Our Poultry Foods are sold by all local dealers and manufactured solely by

The Pacific Guano and Fertilizer Co.

Also Pioneer Manufacturers of *High Grade Fertilizers.* Write for our free booklet, "Farmer's Friend." Valuable to all farmers and ranchers

Indiana and Yolo Sts., San Francisco, Cal.

Chicks Just Hatched

We ship them everywhere. Pure Bred White Leghorn Chicks from the Best Egg Producers in the United States

MAXWELL, MAY 27, 1906.

CALIFORNIA INCUBATOR CO.,
Gentlemen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come so far and being so long on the way without the loss of a single one, but it is an undisputed fact that such was the case We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. CAMPBELL.

CALIFORNIA INCUBATOR CO., 907 Washington St., Petaluma, Cal.

Standard st National O Co	3.70
Orchard o r National O Co	3.45
Criterion o r Penn Ft Co	3.00
Titus Ranch ex ch S Mrno Gr P A	2.70
Independent o r Highland D	3.20
Stock Label Highland D	2.95
Whittier, fy Redlands Jct	3.25
Whittier ch Redlands Jct	3.00
Alpha ex fy Riverside Ft Co	3.45
El kex ch Riverside Ft Co	3.15
Slover Mtn o r Colton Dist	2.70
Old Mission fy C C Chapman	2.70
Old Mission ch C C Chapman	2.50
Gilden Eagle st C C Chapman	2.45
Eagle Head Thom Im I L Lyons	3.35
Buffalo Head ch I L Lyons & Sons	2.75
Tiger Head ex ch I L Lyons Sons	2.50
B Keystone fy King Ft Co	2.85
R Keystone ch King Ft Co	2.90
Native Son st King Ft Co	2.50
Salt Lake st King Ft Co	2.35
Sunshine Grove J F Bowen	2.70
Sunshine Grove J F Bowen	2.60
Slover Mtn fy Colton D	2.70
Slover Mtn ch Calton D	2.75
Clover ex ch Redlands O G A	3.15
Mayflower Richardson, Fullerton	2.65
Pilgrim Richardson Fullerton	2.60
SEEDLINGS—	AV.
Serenade	3.00
BLOODS—	AV.
La Mesa ex fy Riverside Ex	3.50
LEMONS—	AV.
Independent fy Highland D	4.45
Independent ex ch Highland D	3.80
TANGERINES (Halves)—	AV.
Blue Seal ex fy A C G Ft Ex	2.05
Lion Head ex fy I L Lyons & Sons	1.95
MANDARINS (Halves)—	AV.
Orachrd o r National O Co	1.95
GRAPEFRUIT—	AV.
Mayflower Richardson Fullerton	2.75

Philadelphia Market.

March 25.—The market is very strong and the weather cool. Seventeen carloads navels, one seedlings and two mixed carloads sold today.

NAVELS—	AV
G Flower ex f Redlands G Q A	$3.30
Mt Lion f F H Speich & Co.	2.95
Gondolier ex ch Cal Citrus Union	2.85
Gypsy Queen ex f Moulton & Green	2.80
Carnation ex ch Moulton & Greene	2.40
W Highland f Highland Dist	2.60
Salt Lake st King Ft Co	2.40
Golden Rule ex ch Riverside Ex	3.05
Fiesta ex ch R'side Ex Pachappa	3.05
Floral ch S B Ex Colton	2.45
Carmencita ex ch S T Ex Fullerton	2.50
Colombo st S T Ex Fullerton	2.40
Blue Flag ex f Spence Ft Co	3.25
Lone Palm	2.95
Sunrise st Cal Citrus Union	2.80
Red Pride ex ch Bryn Mawr Assn	2.75
Red Best ex f Bryn Mawr Assn	2.55
La Belle st Bryn Mawr Assn	2.85
Sunshine ch J F Bowen	2.45
Puritan f S B Ex Rialto	2.80
Tallyho ch S B Ex Rialto	2.75
Pointer ex ch A C G Ex Glendora	2.25
Quail ex ch O K Ex Jpland	2.30
Rebecca ex ch R H Redlands Junc.	2.80
TANGERINES—	
Quail O K Ex Upland	1.95

Pittsburg Market.

March 25.—The market is very strong and weather favorable. Ten carloads of oranges and one of lemons sold today.

NAVELS—	AV
Success or r F H Speich & Co	$3.20
Native	3.30
Pansy ex f Colton O G A	2.90
Lark ch O K Cucamonga	2.55
Quail ex ch O K Cucamonga	2.20
Red Shield ex ch A C G Ex Azusa	2.35
Violet ex ch D M Ex Duarte	3.20
Jasmine st D M Ex Duarte	3.00
Orchard or r Natl Orange Co	3.50
Standard st Natl Orange Co	3.10
La Mesa ex f Riverside Ex	3.40
Golden Rule ex ch Riverside Ex	3.15
Owl st O K Ex Cucamonga	2.35
Golden st Riverside Ex	2.80
Humming Bird or r Riverside Ex.	3.00
Riverside st Riverside Ex	2.00

CITRUS FRUIT SHIPMENTS.

LOS ANGELES, March 26.—Monday, March 25; oranges, 119 carloads; lemons, 10 carloads. Total to date this season, 11,480 carloads, of which 1195 carloads are lemons. Total to same date last season, 13,150 carloads, of which 1347 were lemons.

More about Chick Food.

We hear so much talk about feeding poultry, such a variety of opinions, that after listening to all the talk, one begins to wonder how our ancestors ever succeeded in raising any poultry at all; but when referring to past history we find that they did raise poultry, and that their minister was sure of a yellow-legged young rooster for dinner. We also read that they only raised a very small proportion of the chicks that were hatched, which accounts for the fact that they did not have the proper food to bring their young chicks up to and past the age at which so many die.

We have been experimenting with Chick Foods of different makes that are being sold in this market, and our investigation has caused us to study the elements that go to make up the various Chick Foods, and there is one Chick Food we have found that meets all the requirements necessary to produce strong, healthy chicks;—the Excelsior Chick Food,—which is a clean, honest product, manufactured by the Excelsior Mills, 242 Central avenue.

In order to derive the best results, we should advise feeding your hens, once every day, Excelsior Egg Food, which will insure fertile eggs;—then feed your baby chicks on Excelsior Chick Food. We can safely say that you will make no mistake.—Adv.

IT'S PENNY WISE.

Policy to set out a good tree, costing good money and then let the sun burn the bark or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Manufacturing Company, 2124 Willow St., Los Angeles.

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Fastest drillers known. Great money earners!
LOOMIS MACHINE CO., TIFFIN, OHIO

Ross & Tate, Altadena, California
Breeders and Importers of
Buff, Black, and White Orpingtons
Have for sale Trios, Cockerels and Pullets.
Eggs for hatching, settings or hundreds.
Write or call,
Two Blocks North, One Block East Altadena Post Office

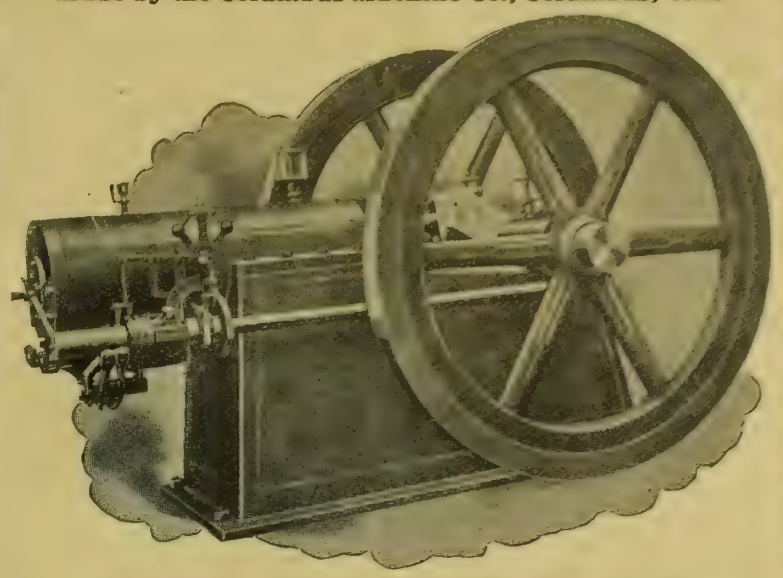
C. J. Ferris
BREEDER OF THE FAMOUS
Buff Plymouth Rocks
Winners of Five Prizes at the late Los Angeles show, the largest show ever held on the coast
A few choice cockerels for sale. Eggs, $2 and $3 per 13. Write your wants.
San Gabriel, California

East San Gabriel Egg Ranch
S. C. WHITE LEGHORNS
BARRED P. ROCKS
Eggs for hatching $1 per 13 $5 per 100 We breed from two year old hens, and the best ones of the flock only. No stock for sale. Ranch two blocks south San Gabriel car line.
Swanson & Johnson *San Gabriel, Cal.*

Eggs For Hatching
FROM
Standard Bred Poultry
Buff and Brown Leghorns, Buff Orpingtons, Columbian Wyandottes and Bronze Turkeys
W. W. Bliss, Duarte, Cal

1907 LOS ANGELES 1907
We won on White Rocks, Barred Rocks, White Wyandottes, Buff Leghorns, White Crested Black Polish.
EGGS FOR SALE. SEND FOR CIRCULAR.
Golden Crest Poultry Ranch.
Box 412 Santa Ana, Cal.

There is a Reason why you should buy
Columbus Engines
Made by the Columbus Machine Co., Columbus, Ohio



Simplicity—Highest Efficiency—Economical
Highest Grade of Material—Best of Workmanship

They have been in the field over fourteen years.
Their output is one of the largest in the United States.
What does this mean? It means that the present standard they are maintaining on Columbus Engines is the result of fourteen years labor of experienced mechanics with one of the best equipped plants in the United States behind them, to produce an engine which is simplicity in itself.
Free from all complicated and trappy devices. It don't take an expert mechanic to see the simplicity and good points on the Columbus Engine over other makes.
It don't take an experienced mechanic to operate it. We carry complete stock at all times. Come in and let us show you.
Estimates given on complete pumping plants.
Correspondence Solicited.

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121 So. Los Angeles St., Los Angeles
If you can't come write us and we will send our representative.

Use Tom Lewis' Fertilizer for Orchard, Garden and Field
Free From Weeds My stock is now ready. **Immediate shipment guaranteed.** Single sacks or carload lots. **My testimonials are the finest** Send for circular and prices. **Office and Works: 1916-1918 10th St., Sacramento, Cal.**

BURN AIR AND SAVE FUEL
You can do it with the
HAGUE IMPROVED DOMESTIC OIL BURNER.
It burns more air than any other burner on the market. Can be fitted to stoves, ranges, furnaces, and all kinds of heating systems. Simplest and most economical burner on the market. If you want the most heat for the least money, write for information to
Hague Domestic Oil Burner Co.,
214 Winston St., Los Angeles, Cal.

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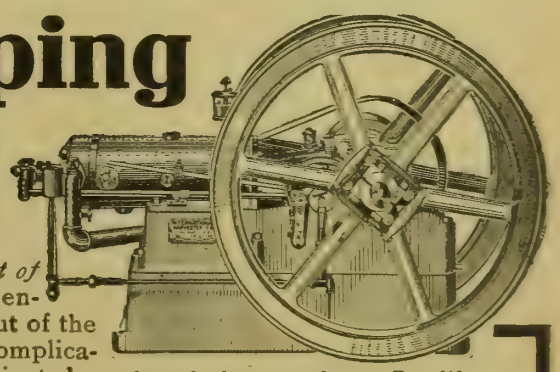
Irrigation Pumping
is done easily and economically with an
I. H. C. Gasoline Engine



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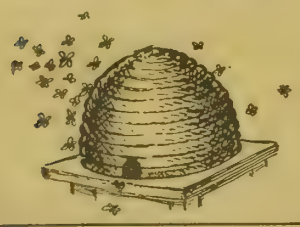

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Household Department

A LITTLE MAN.

A little man dwelt in a little town
A little over twenty years ago;
He gained a little portion of renown
Within the little crowd he used to know.
He wed a little maid when twenty-one,
And later on they had a little son.

This little man had little to regret.
He had but little patience with the weak;
When others fell his eyes were never wet,
With sinners he had little time to speak;
Instead he went to church a little late
And dropped a little nickel in the plate.

He drank a little coffee now and then
But little stronger liquor passed his lips;
He mingled little with Bohemian men;
Life's wine he drank in stringy little sips.
When stragglers came to him for food or bed,
With little pain he shook his little head.

He made a little fortune rapidly
By grinding labor out of little arms,
And by foreclosing a variety
Of little mortgages on little farms.
He died—and, 'neath the little willow bough,
A little worm is working on him now.

—Milwaukee Sentinel.

THE VIAL OF POISON.

CROMARTIE has just published another successful book, and five of us were gathered in his flat, drinking his wine and his health, and saying nice things to him. He lived in Clement's Inn. Everything about him was comfortable, and only I and Kelthorpe—friends of his early days—knew of the fights and struggles he had had to wrench this comfort from the grudging fist of life. And he had paid for it; his face was old and wrinkled, and his hair was gray. I think it was something that Grier said about the necessity of having faith in one's self, if one would be successful, that made Cromartie talk. "You are quite right, Grier," he said, "without faith one is bound to fail. Not faith in one's self, so much as faitn in anything; faith in God, in a woman, or in your work."

At this moment Mrs. Cromartie entered the room, and we rose to our feet. She smiled at us, and went to her husband to kiss his forehead for "Good night." I could not help noticing how Cromartie's fingers closed round her arm.

When Mrs. Cromartie had left the room there was a span of silence, and then Grier said, wistfully: "It must be splendid to have faith. To feel that one can never fail."

"That's the proper spirit," remarked Cromartie, "I'm glad you have that."

"Oh! but I haven't, Mr. Cromartie," cried Grier, with almost a sob. "That's what I haven't. I m always fearful of failure. When you were my age," he asked, "were you like that also?"

We wondered what the reply would be from Cromartie, now that he was at the summit of success.

"Yes," replied Cromartie, shortly. "I was worse. For I was on the very brink of failure. But I won through—simply through faith, though my faith was in a vial of poison.

"I think the story may interest you men," he said, and going to a cabinet, he took from it a small bottle of blue-fluted glass. This he set on the table.

"In this one thing," he began, "you people will be more privileged than my wife. For I would not tell this story to her, though she is one of the characters in the plot. It happened in those years when I dropped away from you and Kelthorpe, and my story is to show you what faith can do.

"I was a clerk in a lawyer's office, and between time I used to write. Everything came back to me with brutal regularity. So I went through the usual stages of advancement; first a story in a local paper; then a poem in a magazine which never paid for poems; then a good story in a paper which died, then stagnation and an impasse! I felt that I had come to the end of things. Twenty-five, mark you, and my whole brain turned with thoughts of gray despair. I had thrown up my job in the law once for an ill-paid position on a trade paper. I felt low and mean, and jealous of every name I saw in print. Twenty-five, again! I had written a long novel, purposely bad, because I wanted money only I made it too bad. (I've got it somewhere in my desk). I felt I should never do anything worth doing; and grew morbid and depressed. Of course I began to drink unwisely.

"Now, I met a lady who is today my wife. She was a breadwinner herself—there's no shame in it, only glory, to say that she was a typist. We first met when I called to see her to ask her to allow me to defer payment for a story she had typed for me. It occurred to me that I was as soiled and sordid as she was pure and splendid.

"The day I came away from her I vowed great things to myself, but when night came I went to bed dulled with drink and dreamed of shattered promises crashing about my ears like falling houses.

'I must tell you that I hid my failures from her. I pretended that I was doing it for her sake. I was now 27, with nothing accomplished. And it was on my 27th birthday that she agreed to become my wife.

" 'Now,' said I to myself, 'I will turn over a new leaf. I will work my best, and I will drink no more.'

"Oh, those were old promises, and I always knew how to cheat myself. I didn't write, and I did drink."

"Go on," said Grier, in a strained whisper.

"There came a morning," continued Cromartie, "when I looked at myself in the mirror and saw that it must stop.

"Conceive me, then, going to a man whom I knew—a relation of mine—and telling him my story. 'I have,' said I, 'a great work to accomplish now. I can write, I know, and I pledge myself, within a year, to write a good book. I won't say it will be a great book, but it will be good; my best.'

" 'Well?" he asked kindly, for I looked very pale and weak and distressed.

" 'Well,' I replied, 'I have an idea, and I want you to help me. I must write this book, you see. I simply must work and give up idling. I want something to make me do it. Love has made me want to do it.' I hesitated, and he asked me again what I wanted.

" 'Give me some poison—laudanum, or morphia, or cyanide of potassium, or anything that kills cleanly and swiftly. Give me this, I say, and I will

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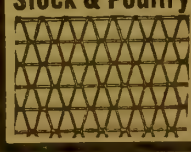
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take it with me. I swear to myself, with you as witness, that if I fail I will take this poison. But I will not fail again, because I want to live.'

"'I can't do it,' said the doctor. 'How do I know that you won't go and drink it at once?'

"I made him understand that it was the idea of having to die at once, if I failed, which would keep me from failing. And he gave me this little bottle, this vial——"

"Ugh," said Grier; "a beastly smell of almonds."

"Get on with the story," said one of the others.

"Well, I went away feeling that I had taken upon myself some great responsibility. The responsibility of my life. I determined that this promise I had made I would keep. I need not bore you with the monotonous repetition of day after day. It was one long fight against myself. The words grew upon my paper; every sentence was won from my pen by self-sacrifice. I isolated myself from my love, and only saw her one or twice a month.

"As the months passed by I saw that what I had written was good. It was of tears and hope, with laughter that was sorrowful. And so I gradually came to have faith in myself, and through that faith to have faith in my love—faith in God and faith in life. One happy day my book was finished. You know the book—'The Test.' It didn't bring me money, but it brought me good word and the beginning of all this." He waved his arm around the room.

"When all was finished I took my vial of poison back to the doctor and gave it to him. 'I have no further use for it,' I said. 'I have finished my task, and I have kept my promise. I am strong enough now without it.'"

"He laughed, and, uncorking the vial, drank from it. I gave a cry of horror and sprang toward him.

"'What's the matter?' he said looking at me innocently. 'You didn't suppose I'd have risked giving you poison? This is only water.'"

We all laughed foolishly.

"That's all," said Cromartie.

"Pass me that bottle," said Grier, huskily. He smelled it again and blushed. "I'll swear it smelt of almonds the first time."

"I smelt of almonds for a year," murmured Cromartie.

"Imagination!" said some one.

"And a moral!" added I.—A Curlander.

FRENCH CABBAGE.

Slice the quantity of cabbage needed and steam in a saucepan for a few moments with a little water and two tablespoonfuls of butter. As soon as the cabbage can be pierced with a steel fork, cover with a dressing made from one egg, one-fourth spoon salt, pepper and one-half cup cream and two tablespoons of vinegar. Steam for a few seconds and serve. Some add a little flour and quite often olive oil is used in place of butter.

HOME REMEDIES.

Inflamed eyes may be relieved by binding over them for a few minutes the scooped-out inside of a fresh potato.

Headache almost always will yield to the application of hot water to the feet and back of the neck at the same time.

If sweet oil is applied to the skin immediately after a blow or bruise it will keep the skin from turning blue or black.

COOKING WINTER BEETS.

The winter beet is tough and not easily cooked. They should be thoroughly scrubbed and the first boiling water drained off to remove the earthy flavor. When tender throw into cold water to slip off the skins, cut them in even slices and serve with vinegar, lemon juice, pepper and salt.

CORNMEAL PUFFS.

Take one cup of hot milk, one tablespoon of melted butter and a pinch of salt; mix well together and add half a cup of cornmeal. Let the mixture cool while you beat two eggs; add a fourth of a cup of sugar to the eggs, and a fourth of a cup flour in which two teaspoons of baking powder are mixed. Stir this all together thoroughly and then put it with the milk and cornmeal. When beaten smooth, pour into hot muffin tins and bake about twenty minutes.

LUNCHEONS WITHOUT MEAT.

Oysters and celery—Cut up and stew two cups of celery until it is transparent and the water is all absorbed; season with salt and pepper. Simmer a pint of oysters in their own juice until the edges curl; season these also and add to the celery. Thicken half a cup of rich milk and pour over all, and serve on rounds of buttered toast.

Creamed finnan haddie—Soften the fish by pouring boiling water over it. Make a large cup of rich, white sauce and after squeezing out all he water from the fish put it in and let it come to the boiling point; serve on buttered toast or as it is.—Harper's Bazar.

MARCH PUDDING.

One cup dried apples, one cup of syrup (made of sugar), one and one-fourth cup flour, one-fourth cup butter, one egg, one teaspoonful each of soda and cinnamon, one-half teaspoon cloves.

Wash and soak apples over night in just enough water to cover. Chop fine, add syrup, hot; then water in which they were soaked, also spices.

Mix egg, butter and flour together, stir soda with apples and syrup, then mix all together and bake in a moderately hot oven.

Serve with cream or with sauce made of one-half cup of butter, one cup sugar, beaten smooth, and flavored with nutmeg.

PUMPKIN PIE.

Stew pumpkin until well done. Mash through colander. To one teacupful add, while warm, granulated sugar to taste, one large tablespoonful of butter, well-beaten yolks of two eggs, and rich cream sufficient to make one pie. Last, stir in the well-beaten whites. Flavor with vanilla or lemon extract.

FIVE MINUTE CAKE.

Take a large cup and fill one-fourth full of melted butter, and into this drop two eggs; then fill the cup up with milk. Sift together one cup of sugar, one cup of flour, a rounding teaspoonful of baking powder. Into this turn the butter, eggs and milk, and beat very hard. Flavor with vanilla. This is good for either a loaf or layer cake.

FRENCH FRIED POTATOES.

Cut in any shape preferred; they should be laid in cold water an hour or more, then dried on a towel before cooking. Slice the potatoes in eights the length of the vegetable and drop them into boiling fat. The pieces will float when done, yet should remain until they are a golden brown. Place in a dish and give them a dash of salt and peper.

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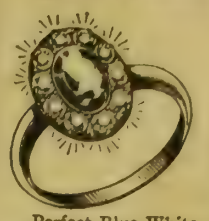

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Stock Raising in California

Continued from First Page

a place of value for fresh cows, it then acts as a laxative, and should be used for a week or two for fresh cows.

Cheap Feeding.

I further think that a dairy cow can be fed cheaper in the great alfalfa regions of the state than in any other part of the United States that depend on home-grown food. There may be places where by-products help the dairy man out, but usually, the manufacturer boasts that he runs his plant on the sale of the by-products, this does not tend to make them cheap.

Improved machinery in the hay field is needed, everywhere, strong, heavy, well-built machinery that will enable fewer men to do the work. The old main strength and awkardness squad of workers must give way to men that have brains to operate machinery.

Alfalfa Growing.

Alfalfa is a greatly abused crop, it will grow and produce some feed under any kind of treatment. Yet, there is as much difference between the palatability of well-grown alfalfa and that poorly grown, as there is between the crisp fresh-grown radish of springtime, and the slowly-grown one, hard and of woody fiber, grown in the heat of summer.

Now I do not know that the two radishes would show any difference in the chemical analysis, except in the amount of water contained. Yet, the difference in the way the family will eat them shows that the food value of one is greater than the other.

Alfalfa hay is the same; the cows will lick the mangers to secure every scrap of well-cured leafy alfalfa hay, while the coarse woody stuff they nose half out of their mangers and leave it. Of course only the feed consumed makes milk, not the waste. Watch the stock on the ranch, see that they eat with keenness, for "digestion ever waits on appetite."

Manuring.

Every fall the alfalfa field needs top dressing with stable manure, to which 200 to 400 pounds of land plaster has been added, for every acre. The manure spreaders are excellent for this purpose and pay for themselves quickly in the labor saved.

If the stand is an old one it will pay to disc the field, and harrow fresh seed into the thin places, before spreading on the manure. I prefer to do this seeding in the fall of the year; some years the young alfalfa may be frost killed, when it will have to be reseeded in the spring. But it will escape more years than it will be winter killed.

The farmer's life is a gamble against weather, bugs and commission men. The weather is more often favorable than unfavorable; some years the bugs are not bad, but the commission man is sure to be on hand for his pickings.

Corn.

The next great crop for the stock man is corn. Indian corn. The White Dent varieties do best in this neighborhood. Everywhere in the interior part of the state this should be the great staple feed for stock on the alfalfa pasture. It supplies the natural balance of carbo-hydrates, against the protein.

The dairyman wastes the corn by cutting and feeding it green. For this purpose he could plant sorghum and save the corn for the silo. Then the late summer and early winter is added to the year of green feeding and the milk fills the pail without regard to the seasons. The cows fed on silage, frisk and have keen appetites.

Silo.

There is nothing new under the sun, only men forget and have the pleasure of rediscovering the same things over again. The early dwellers around the Baltic put grass into pits in the ground and preserved it green for the cattle.

The French peasants of the 17th century put green feed into stone quarries and caves, and covered it up. These tales, as well as the description of ensilage stacks, were told in a French book of Agriculture.

About forty or more years ago, a Virginian built a silo patterned after a plan in this book, but until the seventies, it remained a curiosity, then it suddenly became a success.

Government Work.

The farmers of the United States started a Grange movement and finally said to the law makers at Washington, "give us more attention! Let the arts of peace be placed on as important a footing as the science of war."

I think the ghost of the Billy Penn must have turned over and said—"Aha! Ha!" in real ghostly rejoicing, when the strength of the Government was turned to practical investigation of the ways for farmers to produce the best crops.

The state experiment stations have become a force in the land. Every young man that graduates at the Cow College at Berkeley, has a position offered him before he is ready for it, while the other boys are hunting work.

Now the silo has been pushed and urged on the people by the Department; even Secretary Wilson has been converted from making fodder of corn, to putting it into the silo.

It is said that in 1899 there were about 70,000 silos in the United States. Today, there are about 200,000 and more building every day. I no longer feel that I must say to everyone how good a thing a silo is. Have not the progressive dairymen of every locality already adopted them?

I nave never found a way so cheap to produce a pound of butter as by using well-eared corn in a silo, and feeding it with plenty of alfalfa hay. Thirty to forty pounds of silage and ten pounds of alfalfa hay a day for each cow will keep up a good milk flow.

Grain Ration.

The selling of butter or milk from a cow that produces twenty-five pounds of milk a day, or makes ten pounds of butter a week, will be profitable on silage and alfalfa hay. Now, if this cow has more capacity, she may be pushed into higher production, by giving her grain, then watch her closely and sell her only so much as she pays a profit on. Do not let the cow give you no returns for the feed and extra labor of handling a grain ration.

The many stomachs of a cow makes her an animal that requires bulky food. It is expensive and not healthy to feed a concentrated grain ration, if the cow is to be used as a breeding animal. The high prices of today make it possible to carry an inferior animal, if she is not expensively fed.

Milkers' wages are higher, and nearly offset the high prices the dairyman is receiving this winter for the butter fat. When the prices fall many a cow will go to the shambles that is now being milked.

Horses and Colts.

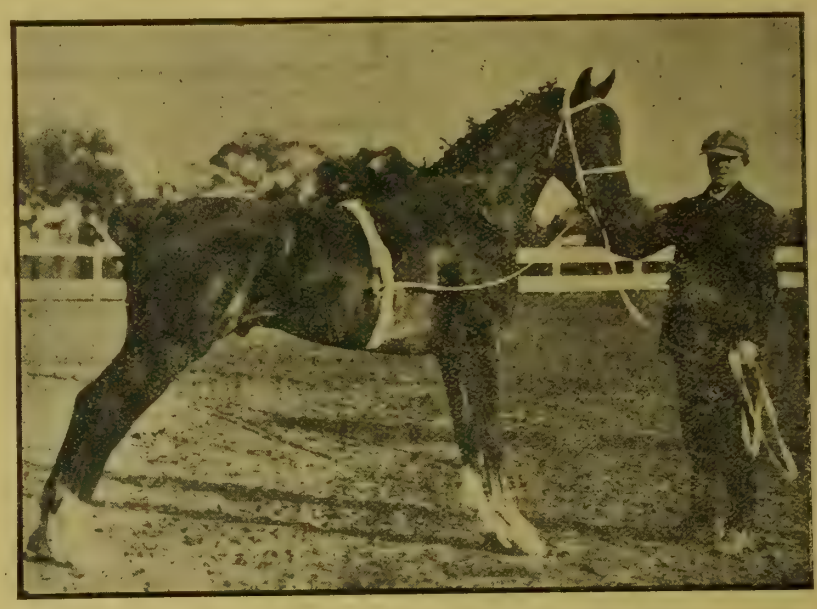
Twenty pounds of silage divided into three feeds, is all it is well to feed a work horse. This, with twelve pounds of mixed alfalfa and grain hay, will keep most of our horses in good working order. Ten pounds a day, is enough for the colt running on pasture. The pigs can also receive a limited amount. Usually they receive the cleanings of the mangers from both horse and cow barns.

Cost of Silo.

About the average cost of a wooden silo has been $1.40 to $2.00 per ton capacity. What it would cost at present high lumber prices I should not like to say.

The cost of the silo is less than a hay building, as the same number of cubic feet have a greater tonnage capacity in weight for silage than for hay, averaging nearly three times as great. The silage at the bottom of the silo becomes compressed and weighs more than that at the top. The silo is merely a giant can that is air tight on the sides; into it we can put the green corn, oats or alfalfa well wetted.

If we desire to do so, it is ready to feed out at once, or it can be left until the heat developed drops down to sixty degrees, then Nature will seal it tightly with a coat of mould; that makes it impossible for air to penetrate.



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Canning.

The silo is merely a giant can, as before stated, in which the heat made by the food acts as a sterilizer and a driver out of oxygen. Then a growth of mold seals it air tight. The cows without silage are like we would be if we had no fresh fruit nor canned fruit or vegetables, but had to eat dried apples and prunes all winter! Good corn silage! How sweet it smells! How appetizing it smells around the barn. If the cows ever drop into poetry like Silas Wegg, they would sing of it, "is sweeter than honeycomb," and more to be desired than the condimental foods that men buy, unwisely, at ten cents a pound for a treat for the cows.

Dr. Dietrich.

It is a paradise for cattle where corn and alfalfa are easily and cheaply grown. If Dr. Dietrich, with his intensive farming, was in California, instead of 21 head of stock on 17 acres of land, I think he would probably have a horse, a cow, a colt, a sheep or a goat, tied at every fence-post on the ranch and then cry out it is more than enough for all.

Intensity.

The richness of the land, the warmth of the sun and the wetness of the rain in California are more intense or at least they take hold of one's mind more deeply with greater intensity than elsewhere; we love them better and are more alive, in our daily life, to the natural world around us. The live-stock feel the same intensity of the atmosphere around them, they respond quickly. An experiment is quickly tried with them. If they like their feed they show it. Some of the older cows used to almost talk when something new was added to their ration. They were pessimistic, to be sure, that always grunted disapproval. Cows could hardly be expected to be better than people.

Corn Crop.

The corn crop will make ten to twenty-five tons of cut corn to the acre. This crop occupies the land from 100 to 110 days, from sowing to maturity.

It can be planted as late as the 4th of July, using land that grew a wheat crop. We sent from the ranch to the Fresno Chamber of Commerce a sheaf of oats seven feet tall, and a sheaf of corn twelve feet high, that grew on the same piece of land the same season.

This we have done year after year planting the oats for silage, mixing in common garden peas, putting them in in December or January; these are ready to cut in April or May. They go into the silo, the land irrigated and corn drilled in, after 100 days this is cut for silage also.

Other Feeds.

The silo can be filled with any green food that cattle consume. The clippings of herbage around the orchards and vineyards will furnish food for stock. The fact that the silo need not be emptied before refilling is an advantage, for the feeding can go on and the crop that comes along can be put into the vacant space and fed right out.

I have had the last ten feet of silage, in one silo, as long as seven years, it grew so compact that the men had to loosen it up with a mattock; the cows ate it readily.

In the spring the foxtail comes, it is tender while young, and is rich in milk-producing elements. Soon, however, it puts on its defensive armor and then it is a terror. If it is cut when first headed and the whole mass put into the silo, it makes excellent feed.

The heating the seeds receive kill their vitality. The last crop of alfalfa is wasted by leaving it on the field to freeze; it should go into the silo.

The alfalfa fields will after a few years grow cleaner hay and make heavier crops than when foxtail and weeds overrun the pasture. If the foxtail or weeds put into the silo are not eaten by the cow they go back to the land, as humus to feed the growing crop.

The Best Crop.

The more humus the soil contains the better will be the crops—more corn—more alfalfa—more cows—to make more butter and milk; butter for the rosy-cheeked boys and girls and milk for the babies.

These are California's best crops—better than her gold, her lumber, her crops, and her stock, her grapes and oranges—are the sturdy native sons and daughters.

These are the pride and joy, they are fed the best the land affords, for if they have wholesome, well-nourished bodies, they will think right thoughts. Then will we be blessed indeed, for no country is greater than the physical perfection and mental poise of her citizens—that makes them sane, reasonable and law-abiding.

DAIRY TALK.

Don't fail to wash milk vessels and dairy utensils as often now as in summer, just because it is cold. Milk does not sour so quickly now that it is cold, but vessels become as dirty now as they do in midsummer.

Warm water is an excellent thing for cows giving milk. If you mix meal and shorts with it all the better, if not too much is given. The quantity will vary with the character of the feed and the cow. A little good judgment then, is a good thing as everywhere else.

It is supposed that up-to-date creameries pay on the test basis, because it is the only proper basis of payment. It gives you credit for just what you sell, and it gives the creamery men just what they buy.

Coulson's Special Dry Chick Food

Feed to Your Chicks

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DRY CHICK FEED
THE BEST FEED FOR LITTLE CHICKS AND TURKEYS
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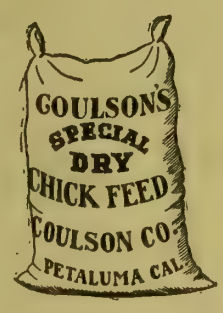
COULSON'S SPECIAL DRY CHICK FEED

And See Them Grow

Advantages of Coulson's Ready Mixed Chick Feed

The proper feeding of poultry is without a doubt the most essential factor in the raising of any kind of poultry for profit. Considerable advancement in the feeding of poultry has been made in the past few years, especially in the feeding of little chicks.

Chicks should be given a feed that makes healthy, well developed bodies. COULSON'S SPECIAL DRY CHICK FEED contains the ingredients that are best adapted to give nourishment to the growing chicks: Sweet tender seeds, cracked grains, blown free from dust, cut oat meal, tiny pieces of cooked and dried meat, fine particles of fresh cut bone, charcoal, burnt bone, and other things.



It is clean, sweet feed that is easily digested, and chicks show increase in weight, strength and beauty when fed it exclusively. Little chicks need no other food for the first six weeks. You can feed your chicks entirely on COULSON'S SPECIAL DRY CHICK FEED the first six weeks, at a cost of about 4 cents apiece.

Ask your feed dealer about Coulson's special and be sure that he does not sell you something else.

If your dealer does not keep it, write us, and we will tell you where and how to get it.

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Pullets Lay Early

"I have fed your Special Food and Growing Chick Food to all my stock with one exception. I tried one lot of 350, and fed them my way or raising chicks back East. Results just fair. The other were fed up to three months on your Special Chick Feed, and the results were a surprise to me. The birds were large and the cockerels out of one lot I sold to the California Market and got a big price, with the request to send on to them at any time I had more cockerels of the same quality." Respectfully, A. P. WARD, Calistoga.

Coulson Poultry & Stock Food Co., Petaluma, Cal. Milwaukee, Ore.

Gentlemen:—

While in the poultry business I have tried several brands of Chick Foods and find COULSON'S SPECIAL far superior to any other brand.

Yours truly,

(Signed.) Floyd W. Scott.

Coulson Poultry and Stock Food Company, Petaluma, California

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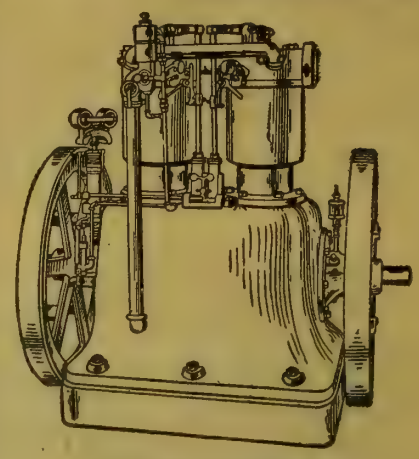

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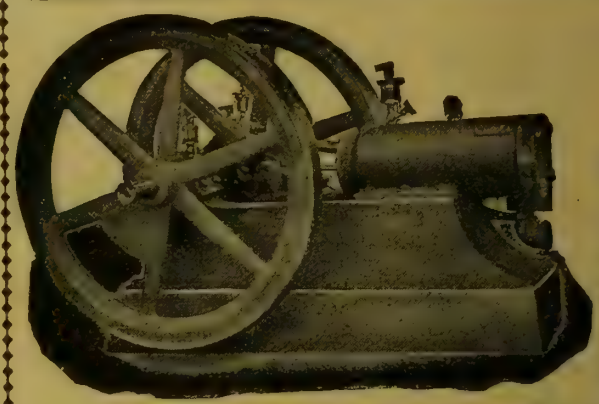

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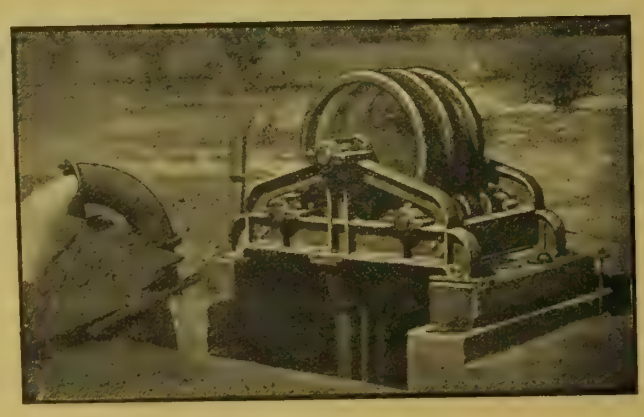

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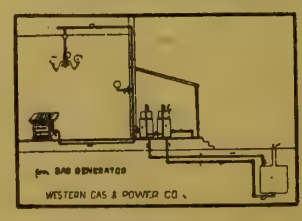

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California Cultivator

Los Angeles April 4 1907 San Francisco

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Courtesy International Harvester Company

ON EVERY FARM there is certain work to be done, such as water raising, corn shelling, wood sawing, fodder cutting, feed grinding, cream separating and churning, as well as a thousand and one other operations, that are expensively accomplished with any other than gasoline engine power.

Hand power is antiquated, and at best, time-consuming and back-breaking; horse power is unsatisfactory and expensive; wind power is unreliable and seldom available when wanted; and as for steam power, the disadvantages are so many that it is hardly necessary to mention them here.

Gasoline (and lately alcohol) engine power has come to replace all these methods. It is not only economical and reliable, but it is actually a source of pleasure. It is so readily accessible at all times, so clean, and requires so little attention and worry that it makes many of the operations about the farm pleasant and profitable instead of disagreeable and unprofitable.

In California, more perhaps than any other state in the Union, is the gasoline, distillate or alcohol engine needed, because the necessity of raising water on a great majority of our farms; while upon many others the primary necessity is still for power, to use in other ways. Cheapness and availability of fuel, with congenial weather for its transportation at all seasons, make our state an ideal one for the universal use of farm power plants, and no up-to-date farmer holding extensive acreage can afford to be without one.

Coulson's Special Dry Chick Food

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GERMAIN SEED CO., Los Angeles, Distributing Agents for Southern California

California Cultivator

Vol. XXVIII—No. 14 Los Angeles, California, Thursday, April 4, 1907 Subscription $1 a Year

Eucalypts Used for Timber and Fuel

A Bulletin Recently Issued by the Forest Service, U. S. Department of Agriculture, Under Direction of

GIFFORD PINCHOT, Forester

SEVERAL species of Eucalypts are suitable for planting in the warmer parts of the United States, but the qualities of the most important are so much the same that only their differences need be referred to. Blue gum is the most extensively planted, and may therefore represent the type.

Blue Gum (Eucalyptus globulus).

The blue gum is an evergreen tree, with smooth, elongated leaves of leathery texture and usually sickle-shaped. Under favorable conditions it grows very rapidly and may attain a height of 150 feet and a diameter of from 3 to 5 feet in thirty years. The form is always slender, though, like most other trees, its crown spreads moderately when given plenty of room. In close stands the stems rapidly clear themselves of branches to a considerable height, but they are rarely straight.

The blue gum is not native to the United States, but was introduced from Australia. It has been widely planted in Central and Southern California, and to some extent in New Mexico and Arizona. Its range is limited by the fact that the young trees cannot withstand a lower temperature that 25 degrees F., and it is useless to plant the trees where greater cold occurs. The directions here given are therefore applicable only to limited regions. In California the trees are confined mainly to the citrus fruit belts, although in places the planting range has been successfully extended beyond these limits.

Blue gum can adapt itself to many kinds of soil, even that containing considerable alkali, but it is entirely dependent upon a plentiful supply of moisture about its roots. Without that, it grows slowly and does not sprout readily. The soil best suited to it is a deep, sandy loam, with ground water within 10 or 15 feet of the surface. In many localities the lack of water is supplied by irrigation, but as a rule irrigated land is too valuable for commercial plantations. Atmospheric moisture is not at all necessary; on the contrary, the tree grows fastest with its roots close to water and its crown exposed to the sun and wind.

Blue gum develops a strong taproot and a vigorous secondary root system, both of which are capable of penetrating to considerable depths in search of moisture.

The tree is extremely intolerant of shade. Its seedlings thrive for a time beneath the old trees, but if the cover is at all dense they make only a slow growth. This indicates the need of so managing a grove that each individual has its crown entirely free.

It is practically free from injurious insects and fungi. Damage from wind is to be feared only on very shallow soil.

The wood is very heavy, hard, strong and tough, but not durable. It is easy to split when first felled, but not after it has dried. It resembles hickory in many of its qualities, but is extremely difficult to season. The trees are sometimes sawed into lumber and used for wagon work and agricultural implements, though for none of these purposes is the wood as good as that of sevefal native species. It is coming into use for piles in sea water, and it appears to be quite valuable for that purpose, though the trials are not yet conclusive. Its chief value at present is as firewood, for which it is in constant demand in parts of California where other good fuel is scarce. This recommends it for commercial plantations. Another important use of the tree is for windbreaks to protect orange and lemon orchards from the high winds that are prevalent in many parts of the fruit-growing section. No other tree will make so good a shelter-belt in so short a time as blue gum.

The blue gum reproduces freely both by seeds and by stump sprouts. Plantations must be established by seedlings, but the vigor of the sprouts recommends that means of renewing a grove when it is cut.

The seeds are produced in large quantities every year. Most of them ripen in the fall, usually just before the rains. The fruit should be gathered before the valves open, and spread on sheets in the sun. In a few days the seeds will be freed and may be easily separated from the hulls and chaff. They should be planted at once in shallow boxes filled with not less than 3 or 4 inches of sandy loam, or in small paper or bamboo pots. The box most commonly used is 18 by 30 inches and 3 inches deep. It is better to plant the seed in this way than in seed beds, because the boxes or pots make it posible to transport the young plants to the planting ground without taking them from the soil. The seedlings are very tender and may easily be injured by exposure of their roots to the dry air. The use of boxes also serves to keep the young trees from developing taproots so long that they cannot easily be transplanted. Two or three seeds should be sown in each pot, or in groups about 2 inches apart in the boxes, and covered with about one-quarter inch of sand. The boxes should be kept moist until the seeds germinate, which they usually do in about ten days. After that time they may be set outdoors and the plants left to be watered by the rains, or they can be housed and watered artifically. In either case the plants should be watched, lest they become too wet and suffer by the fungous disease called "damping off." Where the seedlings come up thickly, it is a good plan to take from each pot or group all but the one strongest plant, and to transfer the rest to other boxes. This should be done when the plants are about 2 inches high.

Toward the end of the rainy season, or about the first of March, the seedlings will be about 6 inches high, and may then be taken to the permanent site and planted out. If grown in pots, the whole thing may be set in the ground, and the paper or bamboo left to rot. If boxes are used, each plant should be removed from the soil and set at once in ground previously prepared with plow and harrow. If the ground is dry, it will be necessary to water each young tree as soon as it is set out, and perhaps to continue watering for a year or two, but the trees should gradually be accustomed to do without irrigation. The planting of Eucalypts for commercial purposes is not advised where the trees cannot find their own water within two years.

For wood-lots a good spacing is 8 feet by 8 feet. This gives room to cultivate the young trees, yet sets them close enough to grow tall and clear. The plantation should be cultivated frequently for two years; at the end of that time it should be able to take care of itself.

This method of propagation is recommended because it takes advantage of the rainy season to grow the seedlings and get them established before the air becomes very dry. Some growers do not plant the seeds until spring, and a few sow the seeds in the permanent site or collect wild seedlings from an old grove. Any of these methods may be followed, though the first described is apt to be the surest and best. Those who contemplate planting will naturally compare the cost of seedlings from a nursery with the cost of those they may raise.

It is decidedly unfortunate that blue gum cannot be planted more widely for windbreaks. If set out with an orchard, the windbreak will easily keep ahead of the fruit trees. In most cases it will attain a height of 50 feet or more in six years, and of 100 feet in ten years. The great value of blue gum for windbreaks lies in the facts that it grows very tall without taking up much ground, that it is firm against all winds but tornadoes, and that its crown is flexible and elastic, and, by bending, diverts the wind diagonally upawrd, instead of offering a resistance that forces it to go through in strong currents. On the other hand, there is the disadvantage that the clear trunks offer little opposition to the wind near the ground. This, however, is easily overcome by planting a close row of cedar or cypress next to the gum.

Blue gum windbreaks are most effective when composed of two rows of trees set 4 feet apart; the trees in the two rows alternating instead of being opposite.

O O O O O O

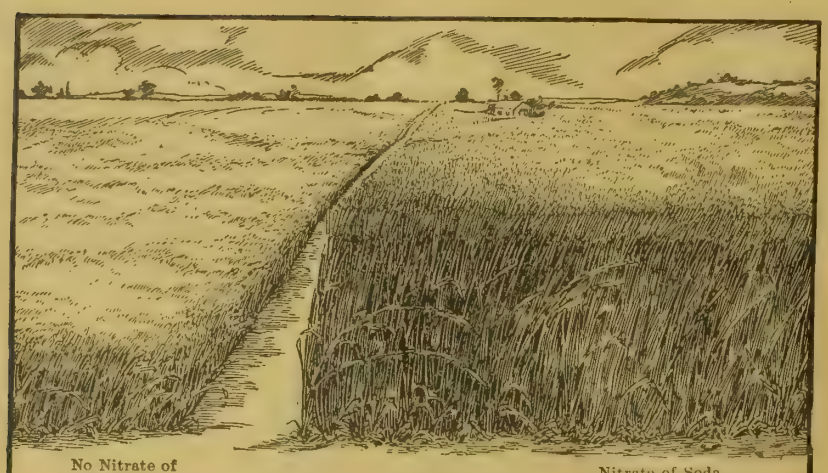
O O O O O O

Many planters, however, are satisfied with a single row.

The intervals between parallel windbreaks will vary according to the character of the local winds, but in most parts of California it is thought best to have them not more than 400 feet apart. The trees may be obtained, planted and cared for in the same way as those in wood-lots.

Either Monterey cypress or Italian cypress is recommended for the lower part of a composite windbreak. Both grow quite rapidly and will maintain a dense hedge to a height of from 30 to 40 feet. One row of blue gum and one row of cypress are all that is necessary. The latter may take the place of the leeward row of blue gums indicated in the diagram above, though when the cypress trees are about 10 feet high every other one should be removed leaving them 8 feet apart. The blue gums should be maintained with their original spacing of 4 feet by planting a new tree wherever one dies.

Continued on Page 379.



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Deciduous Fruit Culture

By J. W. MILLS

PLANT TREES RIGHT.

IT IS quite a common idea that it is best to plant a tree a little deeper in the orchard than it grew in the nursery. Just why this idea does take hold of some people we do not know. It is, perhaps, because they think that the trees have been deprived of part of their roots and in order to allow them to get as deep into the soil as possible after taking them from the nursery, they give them a good start by putting them down deep to start with.

Recent experiments carried on by systematic planting of trees at different depths showed that the size of the trees and the development of the root system decreased with every increase of depth of planting. For those who think there is something to be gained by deep planting should change their minds if they believe this record. This experiment was made in one of the government experiment stations in Germany. We have had the same experience with Bartlett pear trees ourself in a certain way. The trees up to two or three years did very little growing when we removed about six inches of soil from around the base of the trees, exposing the bark to the point that was on a level with the ground in the nursery. After this the trees did much better, but not as well as those which were properly planted in the first place.

WALNUTS DAMAGED BY FRUIT.

Some experiments were made several years ago in Fomona, showing the bad effect of dipping walnuts. At a farmers' meeting, nuts were shown that had been submerged in water for 10 minutes. Before the treatment, they were closed perfectly tight. A few hours after they had nearly all opened at the apex, showing that they had absorbed enough water to open them and thus permit the kernels to be exposed to the air and as a consequence to become rancid after a certain time. It is a fact that hard shell nuts keep sweet longer than soft shell nuts. It was also brought out at the meeting that some dried fruit and walnuts in boxes had been stored in the packing house, the boxes being stacked closely together, the walnuts had absorbed enough moisture from the adjoining boxes of dried fruit to cause them to open. This would, of course, cause the nuts to become rancid sooner than if they had never been allowed to become opened even slightly. Many were much surprised to know that the walnut was so susceptible to so slight a degree of moisture.

SPRAYING INSURES FRUIT.

At the Southern Illinois Horticultural Society meeting W. S. Ferrine, a Western fruit grower, who marketed 15,000 barrels of apples the past fall, read a paper that contained valuable suggestions, as follows:

When the conditions are most unfavorable, he said, there is the greatest need of thought and persistent work with the spray pump. But even this year, with conditions extremely favorable, the reward for intelligent and thorough spraying and the general care of the orchards this year and the previous years was very great. Up to within a month and a half or two months of the picking time unsprayed orchards looked practically as well as sprayed ones, and in some cases better, but by picking time there was a great contrast in favor of the well-sprayed orchards.

Very many of the unsprayed orchards that helped to swell the early crop estimate, did not materialize at the barrel, there being practically no fruit for the barrel. On the contrary, many of the sprayed orchards barreled more than they promised. Therefore, I say that even this year a heavy outlay for spraying, cultivation and fertilizing paid a very large dividend on the investment.

This year has again proved that a neglected orchard is an unprofitable piece of property to the owner, and a public nuisance, while a well-cared-for orchard is a profitable posession and a public blessing.

This year has taught us that the grower must not depend on the buyer to come and harvest his apples, or even to buy them after they are harvested. Quite a large per cent. of the apples in the Middle West went to waste simply because the growers made no provision for handling them.

This year has taught that there will always be a market for good apples, and in barrels, at that. Thousands of barrels of No. 1 virtually went to waste that would have brought from $1.40 to $1.50 or even more f. o. b. if they had been barreled in a good shape at the proper time.

Pernaps this year ought to teach us the principle of fewer acres and better care, certainly of fewer orchards unless better cared for. Unspraye . orchards are a breeding place for codling moth and other insects to reinfest sprayed orchards.

PERSIMMONS.

There is a spasmodic demand for information on persimmon culture that comes with the unequal bearing of the trees. When the crop is light the prices are high, and it is at once presumed by some that the persimmon is a profitable crop to raise. The character of the fruit is such that a few specimens satisfy most persons. They have that dead sweetness, totally devoid of acid that is perceptible, that is cloying. It is, however, a delicious fruit for a change, but can never be compared with the apple, orange or peach or many other kinds too numerous too mention.

There are numerous varieties of persimmons that are propagated and are true to type. The only varieties worth raising in California for market are the Japanese varieties. Hachiya is a favorite, being delicate in flavor. It is oblong and conical in shape, with few seeds.

Hyakume is a large persimmon, shaped like a tomato, pointed at the apex. The flesh is a rusty brown in color and lacks the astringent property that most varieties have. Yemon is a very fine persimmon, large and of fine flavor. It ripens early and is at its best when very soft. In fact, all persimmons are at their best when they can be cleaned close to the skin with a spoon.

BUYING FERTILIZERS.

There is one reform that is much needed in the purchase of fertilizers, and that is a change from the almost universal practice of buying on the flat ton rate.

When fertilizers are bought on this basis, farmers often pay practically the same price for different fertilizers whose compositions necessarily make their commercial values vary considerably, and one may rest assured that he pays too much for the brand of lower value instead of too little for the brand of higher value.

The brand or name stands for what the manufacturer thinks is best suited for the crop for which the brand is intended, or else it stands for what the manufacturer wishes the farmer to think is best suited for his crop, in order that the manufacturer may dispose of, at best advantage to himself, fertilizing materials on which he has a corner, or which he can procure on more favorable terms than others.

It is often the case that the immediate financial returns influence the agent's theory of fertilization. Thus it is that some dealers will declare that experience has definitely settled it that organic nitrogen from animal sources is best for most, if not all crops, and these are the dealers who are directly or indirectly interested in the packing industries.

On the other hand, some are very positive that nitrate of soda should be the source of the greater part of the nitrogen, and investigation might disclose the fact that nitrogen in nitrate of soda is the cheapest form for this class of manufacturers. Some will declare with authority that superphosphate made from phosphate rock is superior to superphosphate made from bone, and vice versa (when there is no difference), and one does not have to look very far to find that each party is inter-

An Abundance of Fruit

of highest quality, finely colored and flavored, is the direct result of supplying a complete fertilizer containing from 7 to 12 per cent. of

POTASH

to the tree, vine or bush.

"Plant Food" is a book well worth a place in the library of any fruit grower. We will gladly mail it to all applicants.

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TREE PROTECTOR
Made of Yucca Palm

Is cheap, durable and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn grasshoppers or dry winds Can be easily removed: will last for years.

Send for samples.

PRICES

12 inch long,	$ 9.00	per 1000
14 inch long,	10.00	per 1000
16 inch long,	11.50	per 1000
18 inch long,	12.50	per 1000
24 inch long,	15.00	per 1000
30 inch long,	17.00	per 1000

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GRAPES

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Red Emperor — True Spanish Malaga
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Write Us for Special Prices on These Varieties

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TROPICO BEAUTY
BRANDYWINE

$2.00 per 1,000, f. o. b.
Lots of 20,000 or more, $1.75 per 1000, f. o. b.
Lots of 100,000 or more, $1.50 per 1,000, f. o. b.
For Sale by the Grower,

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Apples, 4 to 6 ft. 7c
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S. S. Almonds, 4 to 6 ft. ..10c
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Gooseberries (assorted) 10c
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Send for surplu list.
Phone Sebastopol Rural 93.
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Crimson Winter Rhubarb
Original Burbank Strain

$1.50 per Doz., $6.00 per 100, $40 per 1000

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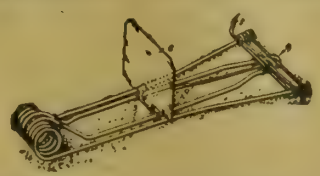
A Fine Stock of Superlative Raspberry, also Fruit Trees and Vines of All Sorts. Both Phones.
P. S.—See Article in Cultivator on Page 550, issue of December 6th.

MACABEE GOPHER TRAP



Small, simple, sure. At all dealers. If your dealer does not handle same, send 20 cents in stamps and mention your dealer's name and get sample by mail postage paid at special rates. Manufactured by
Z. A. MACABEE, LOS GATOS, CAL.

ested in the material which he advocates.

Still others will say that non-acidulated bone is the best form of phosphoric acid, and it would not be surprising to find that the dealer in this class finds greater profit in handling untreated bone, or else that he is not prepared to acidulate his materials.

It is not intended to discuss here what materials are best suited for various crops under various conditions, but to suggest to the buyers of fertilizers that they should know what they want and then go to the fertilizer dealer to supply their wants.

In short, it is intended to suggest to the farmer the advantages of buying fertilizing ingredients at a definite price per unit, instead of buying "brands" of fertilizers on the ton basis. The fertilizing ingredients may be bought in the unmixed materials, or they may be bought mixed in proportions which seem best suited to the farmer's need, but in either case the transaction should be on the unit basis.

A unit of a fertilizing ingredient is one per cent. in a ton. Thus, if nitrite of soda contains 15½ per cent. of nitrogen, one ton contains 15½ units of nitrogen. In other words, the figures that are used in expressing the guaranteed analysis express the number of units in a ton of the material.

Buying fertilizers on the unit basis means that the dealer must state how much he is charging per unit for available and insoluble phosphoric acid, or if does not guarantee available and insoluble phosphoric acid, how much he is charging per unit for total phosphoric acid; how much per unit for each form of nitrogen, and how much per unit for potash.

This then puts the purchase of fertilizers strictly on a competitive basis, and the buyer is at once able to say who is giving him plant food at the lowest price. It does away with all hidden virtues which lurk in the "so much per ton" mixed fertilizers. Of course throughout the transaction the farmer must not lose sight of the quality of the materials used and the mechanical condition of the fertilizer.

This basis of purchase also affords a just basis of settlement in case goods do not come up to guaranty. If the fertilizer has fallen short in one or more ingredients it is a simple matter of arithmetic to arrive at what should be paid for the goods on the basis of the agreed price. The farmer should never forget that he is buying and using pounds of nitrogen, phosphoric acid and potash, and not tons of "fertilizer."

It is not sufficient for the dealer to quote a price per ton and say that this price is made up on a reasonable price per unit for the ingredients. The price per unit for each ingredient should be given.

If farmers would stand together in demanding this basis of dealing it would be a very easy matter to obtain it. If the manufacturer objects to this plan, the farmer may remind him that it is the basis on which he buys his own materials. If it is good for the manufacturer, why is it not good for the farmer?

The question is often asked, is it better to buy mixed fertilizers, or to buy materials and mix them on the farm? The answer is very simple. If the manufacturer mixes them better and cheaper that the farmer can mix them, then buy the mixed. The question of cost of mixing can be determined by getting the cost of ingredients in the unmixed materials and in the ready-mixed fertilizers.

All the materials which enter into the mixed fertilizers may be bought unmixed in the market. But in buying the unmixed materials care should always be exercised to obtain them in a finely ground condition. In mixing them, the bulkiest material should be placed in an even layer upon a tight floor, the others above this in order of bulk, then begin at one end and shovel the pile back. Rpeat the operation once or twice or until the materials are well mixed.

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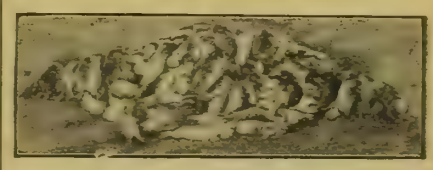
Now is the time to go for gophers with Bille's Gopher Poison. The gophers go for it and it will go for them good and plenty every time.



This is a photo of 201 killed in one day on a ten acre field before they could get back to their holes, with one bottle of

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Endorsed by Agricultural Colleges and Experiment Stations. Not one of the ordinary poisons, but in a class by itself. Has had greatest success in the Middle West. The secret being that it is most attractive to gophers, squirrels, etc., and sure death to them. It gives the grain a glossy coating, retaining the poison for weeks. Hundreds also die in their holes by eating it there. We have bought the patent rights for this section and are selling at the eastern price of $1.25 for large bottle. The ingredients cannot be bought at a drug store for that price. Money refunded if not as represented—so printed on the bottle. If your dealer does not keep it send $2.50 for two bottles, express prepaid by us

We do not send less than 2 bottles.
Compounded under Bille's patent by
West Coast Stock Food Co.
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Warranted to give satisfaction.

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CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

Flying Dutchman Walking Plows

are acknowledged leaders the world over. Ask your dealer to show you the BLUE BIRD, a general purpose plow built especially for the Pacific Coast. Wood and steel beam.

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Send 4 cents in stamps for Flying Dutchman Song Book,

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cures nearly all common horse ailments. When we say cure, and it fails, $100. reward. Never claimed yet. Get free "Veterinary Experience." 100 pages. Makes you master of horse ailments and diseases. Write for copy.

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For Sale Our Herd Bull Sargent Fox, 64833

As we have dispersed our herd, except a few heifers for home use, we are forced to offer for sale this valuable sire. We will sell him at a low price to a breeder who is in a position to give this bull a chance to make a record.

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FOR SALE—

PERCHERON HORSES
HOLSTEIN CATTLE...

2 Young Black Percheron Stallions
5 Young Holstein Bulls
10 Young Holstein Heifers
ALL REGISTERED

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VENADERA HERD
OF REGISTERED JERSEYS

FOR SALE—RICHLY-BRED YOUNG bulls from cow having High Official Yearly Records. Also a few heifer calves of best breeding. For particulars address

GUY H. MILLER,
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Importer and breeder of RED POLLED CATTLE, SHROPSHIRE SHEEP, RAMBOUILLET SHEEP, HORNLESS AMERICAN MERINO SHEEP. Both sexes for sale. Take electric car at Petaluma or Santa Rosa for LIVE OAKS STATION. Address all mail to

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John Lynch Breeder of Registered Shorthorns
MILK STRAIN
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The Whiting Jersey Stock Farm Company

Is making the very best strains of blood fresh from the Island of Jersey a specialty.

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Thoroughbred Poland China Swine
Black Minorca and Barred Rock Poultry
High Grade Stock of Best Strains.
Young Stock For Sale.
M. Bassett - - Hanford, Ca

Thoroughbred Poland China Pigs and Shoats

of both sexes for sale at reduced rates for 30 days. Address

W. R. McCaslin & Son, Walsh Station, Sacramento County, California.

Geo. C. Roeding, Fresno, Cal., breeder of
Thoroughbred Holstein Bulls and Heifers
Thoroughbred Berkshire Boars and Sows

Live Stock and Dairy

By Mrs. Minna E. Sherman, Fresno, Cal.

MILKING MACHINES.

THERE seems to be little doubt in the minds of those that are in close touch with the dairy interest of the East, that the milking machine is no longer a fad, but of practical use to the dairymen.

In a few years it is believed, the machine will have superceded the present untidy milker. The matter has reached the limit of forbearance, the industry is being injured and the people driven from using milk by the conditions under which much of it is produced.

Women Milkers.

The excess of dirt in the milking pail is rather a modern addition. It came when dairying became a commercial business. In the former days when the distance between the cow and the consumer was shorter, the dairy cow was milked by the farmer's wife and children.

After the family wants were supplied the excess was sold. It was usually a clean lot of milk or butter for the matter was a personal one between the woman of the farm and the woman that used the milk and butter.

Man Milkers.

When dairying became the farmers' business, the women could no longer milk the long string of cows necessary. Then came the man milker and the mussing.

A dirty pair of overalls stiff with many milkings, tobacco stained fingers, and a good, loud smell was his get up to go into the milking barn. It was a sad day for Bossy when her woman friend with a clean apron, her personal friend, left the barn to the hired man that regarded the cow as a machine, not a creature full of sensitive sympathy with its surroundings.

Clean Men.

Today when a man really looks clean on the ranch, we are apt to say to him, "were you in the Philippines or Cuba?" The army and navy do train men to be clean personally, whatever sort of souls they may have naturally.

The Swede and Dane are cleaner than the native Americans, but usually they are not milkers, but buttermakers, as they nearly always work up rapidly to the better paid positions on the ranch. The south of Europe people today furnish the mass of our dairy help.

They are not clean or human by nature. The animal to them is simply something to be hammered if it does not do as they wish it to, not to be trained carefully into doing its best. The dairymen today are greatly dissatisfied with the milkers.

Separators and Milking Machines.

The milking machine is a crying need. Today, it is being used in a thousand dairies in the United States alone. While not perfect as yet it will not be long until the imperfect points will be found and remedied.

Today, the milking machines are giving as good service as the separators did in the eighties, and the separator is nearly a perfect machine doing clean skimming with a small amount of power.

The milking machine is coming to perfection as quickly. Sanitary milk will be a possibility for every dairy to produce and cheap enough for every family to use. The greater the need the sooner will come the perfected article, for when many minds are directed to one point they seem to act as a great brain wave and the same invention or the same thought springs up in more than one mind at the same moment.

Less Expense.

One man milks three times as many cows as under the present hand milking system, the machine may therefore cost considerable when set up with the power to run it, and yet be enough cheaper in operation to leave a good margin of profit.

I like the idea of paying one good, clean man high wages rather than three or four of the present type at the rate of $35.00 to $40.00 a month for their untidy incompetency.

The large machine I saw was a Lawrence-Burrell-Kennedy. I note that this seems to be the one that well-known men like Mr. Gurler speak of with approval in the dairy press.

Operating.

The milking machine may then he assumed to do fairly good work, as good and more uniform than the ordinary milker. The machines are simple enough for anyone to undersand. One man told me he made the only possible mistake with his machine, in that he allowed the milk to be drawn up into the vacuum pipes, but, as he said, it was purely nervous excitement that did it.

The mistake was made right by

We're Checkerboard twins—hardy, healthy and happy. See our ad, page 376.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fere Outfits See O. J. Weder Co., 555-557 So. Los Angeles St., Los Angeles.

MILK CANS

Write us for prices on the Buhl sanitary "Glass Finish" Milk Cans, all sizes. We have the largest stock on the Coast and our prices are the lowest.

See Our Cream Separators

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Confident that a trial will prove the superior merits of

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Beyond question the best condition powder made.
We will send to new customers one 25-lb.

$3.00 Pail for $2.00

or one 50-lb. $5.75 double sack for $3.50, and will prepay the freight to any point west of the Rockies. Not more than 50 lbs. to each one, and we reserve the right to withdraw this offer without notice when we have received all the orders we care to fill at these very low prices.

We are presenting no cheap premiums nor offering any gaudily colored pictures, but we are making this strictly legitimate business offer for the purpose of inducing more to try it. We thus hope to add to our large number of steady customers. We are charging up the difference and the freight to our advertising account, feeling sure that a trial of the goods is the very best advertising.

There are no strings to this offer. Just send us your name, your postoffice address, the freight station to which you want the goods shipped, mention this paper, and we will do the rest. Send money order or check with your order, and if everything is not exactly as represented your money will be refunded. The First National Bank of this city, or Bradstreet's Agency, or any leading firm, can inform you as to our reliability. WEST COAST STOCK FOOD has for many years been a standard condition powder in this section. See our full page adv. in the March 7th and 28th issues of this paper, or send for circular with testimonials.

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West Coast Stock Food Co.

818 San Fernando St (Through to Alameda) Los Angeles, Cal.

LA FAYETTE STOCK FARM

The Largest Importers in America of

German Coach, Percheron and Belgian Stallions

Stock For Sale at Our Stables, State Fair Grounds

J. Crouch & Son

La Fayette, Ind.
Seattle, Wash.
Nashville, Tenn.

Sacramento, Cal.

simply running clean water at once through the pipes for half an hour. A six horse gasoline engine furnished power for the four machines at work, milking eight cows at one time.

The Cow's Side.

Only one cow was restless under the machine, the cups or discs fitted a little too tight on the teats. The owner thought this cow he would sell as she was gentle under hand milking, and not of value enough to take extra trouble with. It is said that sometimes it startles a nervous cow if the cups drop off during the milking.

The cow that is milked from the wrong side is often a little troublesome at first, but is broken by using the machine at first on the right side and then changing it over to the other one.

The heifers take more kindly to the milking machines than to hand milking, probably because it is more regular than the ordinary milker's work. The boys on the ranch call themselves "Cow Juice Jerkers;" I think it is a good description of much of the milking.

Strippers.

At first it was thought necessary to strip by hand, but after following this up in one dairy of fifty cows it was found that only two quarts of milk were gained. It was also found it was the cows that were going dry that gave this milk, not the fresh ones.

Now, it is said that the best results are obtained by breaking in a herd by degrees. The fresh cows are milked by the machine as they come in, while the cows that have nearly finished their milking period are allowed to go dry under hand milking.

The cows going out of milk are more nervous and dislike changes, as they have their brain forces centered in protecting the coming calf. They resent changes of any sort. A fresh cow is contented if she has plenty to eat and something to relieve the distension of her udder.

Be Gentle.

Gentleness and kindliness are necessary at first in introducing anything new into the lives of the domestic animals. The heifers being young do not resent changes as much as the older cows in whom habits have become fixed. Take a cow in the flush of milk, when the udder is tender, the drawing off of the milk is a relief and if gently done is pleasant.

The machine is regular and quiet, it does not stop to gossip or cut off a chew of tobacco, but keeps evenly on to the end. The sense of lightness that follows the removal of the milk from the udder is evidently great. Watch the cows entering the barn with the veins and udder engorged stalk stiffly and slowly along.

After milking is over they move out of the barn briskly with a happy air of relief. It has been found easiest to break them to new ways when the new way is pleasant. While it may be a long time before we all use milking machines, yet certainly with pleasure for clean milk on the dairyman he must move toward it. At present, sanitary dairying raises the price of milk to a luxury that puts it out of the reach of many families that have young children to feed.

The riches of a poor man are said to be his children, but that was in the happy days when there was abundant food. Now that all food stuffs have to be handled and so many have to make a living merely as sellers, the prices to the consumer are high, while the producer is too poorly paid to hire the proper labor to keep the cows in a sanitary condition. Cheap milk has nearly come to mean dirty milk, or at least milk that is only by happy accident clean.

O'Rourke—Do yez know where yez would land if yez raised your hand to me?

O'Lafferty—Shure, roight on your lift eye.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

If it's Purina Chick Food, I want it, for I'm a Checkerboard Chick. See my ad, page 376

The Vital Parts of a Studebaker Are Made Just Right

The vital parts—and *every* part of the Studebaker wagon—are made just right!

That's why the Studebaker is the most economical—costs you less per year.

They last longer—so the original cost is less per year.

They need fewer repairs—so the repair cost is less per year—not to mention saving in time.

They are lighter draft—so they cost you less in *horse flesh*.

Horses cost more than wagons; light draft saves horses.

Studebaker wagons run more easily than others because each wheel is perfectly proportioned, with the box of the hub set in the exact center.

The skein is so set that the wheel runs straight ahead under a load and cannot rub, bind or grind on the skein.

Studebaker hubs never hug either nut or collar. That's another reason why the Studebaker is of such wonderfully light draft.

It makes hard loads easy for horses.

* * *

And it stands up under hard loads.

The Studebaker has a carrying capacity at least 40% greater than that of the ordinary wagon—

Because skein, axle, spoke, hub and tire are made *just right*.

Go to the Studebaker Agent

The skeins, by actual test three times daily in our factory, have a transverse strength 25% greater than that required by the United States Government.

The axles are ¼ inch deeper than others, and are made from selected butt-cut Black Hickory, air-dried from 3 to 5 years.

The hubs are extra large in diameter—made from the best procurable wood.

The famous Studebaker slope-shoulder spokes carry the largest amount of wood into the hub, and are strongest where others are weakest.

The tires are *cold-set*, and are perfectly fitted to each wheel so that there is no such thing as a quickly loosening Studebaker Tire.

At every point of construction, all that can be done, *is* done, to make the Studebaker a perfect wagon.

No wonder the Studebaker lasts!

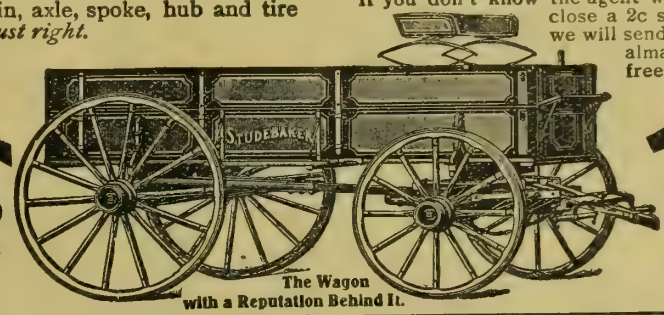
No wonder the largest and best equipped vehicle factory in the world is required to meet the demand for the Studebaker.

See the Studebaker Agent

Let him show you a Studebaker wagon, or carriage or harness. They will talk for themselves. Ask him for a free copy of the *Studebaker Farmers' Almanac for 1907*.

If you don't know the agent write us. Enclose a 2c stamp and we will send you the almanac free.

Over 100 Acres in The "Studebaker" Plant. More than 1,000,000 Studebaker Vehicles in Daily Use.



The Wagon with a Reputation Behind It.

For Free Almanac please address with 2c stamp Desk 78.

Studebaker Bros. Mfg. Co.,
South Bend, Indiana.
Selling Agents Almost Everywhere.

This "Success" Brooder $10 Delivered

to your nearest railroad station. It's the greatest bargain ever offered in a first-class brooder. Made with four heat-pipes, three-wall extra heavy galvanized heater, all first-grade redwood lumber.

Send Today—But Few Left at This Price

We sell the **"Old Trusty" Incubator,** a machine that will hatch more eggs than any other incubator on the market. Catalogue tells the complete story. Send for it and get our **Free Trial Offer. Write today.**

McClanahan Incubator Company

709 South Main St., Los Angeles, Cal.

Iron Age Garden Tools

Every market gardener knows that a Wheel Hoe is a labor saver

The "Iron Age" tools are the strongest, lightest and best. Our free illustrated booklet tells why and gives valuable suggestions.

Newell Mathews Company

VEHICLES AND IMPLEMENTS

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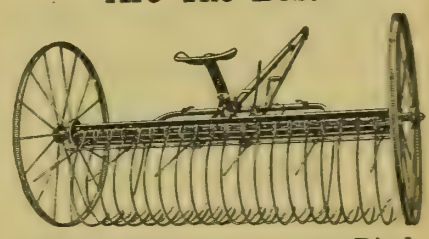
Are The Best



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Pacific Implement Co.

(Successors to D. M. Osborne & Co.)

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120 to 124 S. Los Angeles St., Los Angeles

NO MORE TERRIBLE ROADS

No use of it. The worst and roughest roads make the best when graded, shaped and smoothed with a

20th CENTURY GRADER

Strong, rigid, made of steel. Light draft. Reversible to 50 degrees angle either side. Send for free booklet, "Delightful Roads." Now's the time. Sometimes machines are sent on approval.

White City Grader Co., Box D White City Kansas.

BROOKS' NEW CURE FOR RUPTURE

Brooks' Appliance. New discovery. Wonderful. No obnoxious springs or pads. Automatic Air Cushions. Binds and draws the broken parts together as you would a broken limb. No salves. No lymphol. No lies. Durable, cheap. Pat. Sept. 10, '01.

SENT ON TRIAL.
CATALOGUE FREE.
C. E. BROOKS, 3130 Brooks' Bldg., MARSHALL, MICH.

STRENGTH

DURABILITY

SIMPLICITY

A cream separator that is worth buying must give **long service.** To do that, it must be built strong and the **construction** must be simple. To have simple construction in a separator you must have a Sharples Tubular. There is no other cream separator made that will perform its work so well for so long a time as the **Tubular** because there is no other separator so strongly built, or so **simple** in construction.

Sharples Tubular Cream Separators

get all the cream, have low supply can, are easy to run, easy to clean, because there is only one little piece in the bowl to cleanse after each running, and the machine oils itself. It combines **Utility, Simplicity** and **Durability.** A glance at the pie-plate construction of most separators will give you a fair idea of what we mean by "simple construction" and "strength." For full information about the Sharples Tubular write for booklet E. 260

Mr. R. Carpenter, Davenport, Wash., says "Having used a Sharples Cream Separator over sixteen years can say it is just fine."

THE SHARPLES SEPARATOR CO.

Toronto, Can. WEST CHESTER, PA. Chicago, Ill.

A

DE LAVAL

SEPARATOR

will enable you to get the greatest results from your cows.

A 20TH CENTURY BABCOCK TESTER and an IDEAL MILK SCALE will indicate just what each cow is doing, and inform you what returns you should receive from the creamery. Some cows are profitable, others are not. Get rid of the poor ones and buy good ones. Ask for catalogues A and B.

De Laval Dairy Supply Co.

GENERAL OFFICES:

Drumm and Sacramento Sts., S. F.

107 First St., Portland — 123 N Main St., Los Angeles

1017 Post St., Seattle

VALUE OF SKILL IN MILKING COWS.

Many people think that milking is a job that can be done by one person about as well as another. This is a mistake, as any thorough milker knows. As a writer truly says:

The art of milking is considered as being on a level with pumping water, etc., and yet there are many points needed to stamp a man as a good milker. Too many children are allowed to attend to this important work and many of the chronic troubles of the cheese factory originate right here. A good experienced milker can soon tell if there is something wrong with the udder and milk, and will not allow such milk to be delivered to the factory; but what can you expect of a child? Cleanliness is absolutely collateral to good success in the factory. Everybody knows this and yet you can notice cows being milked that have udders covered with dirt, mainly caused by the swamplike condition of some of the barnyards.

And the milk utensils, do they always get the proper care? Are they always properly washed with hot water and kept in proper places? Are they used exclusively for their purposes alone? I think not, or else the collection of things of all variations delivered with the milk would not be so large as it is. It seems to me that it would be a step in the right direction if we would follow the example of the dairy farmers in Switzerland, who arrange milk courses every year, where the proper care of cow and the milking is taught in all its important details. We certainly need something of this kind.

ENLARGING THE INDUSTRY.

There are many evidences of increasing interest in sheep in the northwest, says a writer in Stock, Farm and Home. Possibly one cause for it is that increasing financial ability of farmers makes the matter of fencing less of a barrier to sheep growing than formerly. Then there is no doubt that knowledge of the sheep and its usefulness on the farm is expanding, which invariably results in increasing the number of flocks in a locality. The higher price of wool, and of the animals as well, has also tended to increase the disposition to make sheep-growing one of the farm's industries. The last consideration should be a minor one, however, because he who looks upon the sheep as a money getter solely is less likely to be successful with it than one who rears sheep because he likes them, has faith in them, and feels lonesome without them; factors that make the true shepherd.

At all events, the sheep sentiment is growing, and growing conservatively, too, which is the best feature of all. There seems to be no rushing into big flocks by the inexperienced, but many farmers are starting with a few, intending to enlarge the flocks as knowledge of how to handle them increases. This is the proper way, and when sheep husbandry is so embarked in on a farm the place is not likely to be sheepless from that time on. The United States should not import half the wool their people consume.

FAMOUS ILLINOIS HOLSTEIN.

Rose was the most famous cow in Illinois in recent years. She died recently, aged 16 years and 10 months, and her record as a milker is going the rounds. She dropped her first calf at the age of 2 years 9½ months, gave milk fourteen years, and was in milk and with calf when she died.

For twelve consecutive years she gave an average of 7,258.5 pounds of milk—largest record for one year, 580.6 pounds of butter fat. In the first nine months of her last lactation period she produced 350 pounds of butter fat.

The fourteen-year record of this wonderful Holstein is given by the experiment station. It was 49 tons (seven carloads) of milk, containing 4,858 pounds of butter fat equivalent to 5,468 pounds (or nearly 2¾ tons) of butter, worth at 25c a pound, $1,214.

The chief dairy husbandry of the University of Illinios thus comments:

"The twelve-year record of Rose and her pioneer identification with these discoveries (all made by weighing and testing the milk of individual cows throughout the year) have given Rose a distinct mission to dairymen everywhere, a mission of far more value than the tons of milk she gave and the dollars she returned her owner. And this is her message: In almost every dairy herd are several very good and several very poor cows, but the dairyman does not know how good or poor they are. The difference is surprising and vital to the dairy business. It is the difference between success and failure, between poverty and plenty. Find out what each cow is doing, or isn't doing (by weighing and testing her milk). Keep the good cows and keep no others. Let the memory and record of Rose ever stand, first, for a definite knowledge of this difference in production; and, second, for a settled policy of improvement of the herd. Standing for this, Rose will yet save the dairymen, who are milking the million cows of Illinois, 4,000 times $1,200 every year instead of returning one owner $1,200 in twelve year."—John Appleton in Town and Country Journal.

It Tells at the Pail

Give the cows what they need and they will give you what you want. No mystery about it. We don't claim to balance the ration, but we do claim to improve digestion by supplying the animal with exactly what the noted medical colleges and authorities claim the animal needs to increase production. No one can doubt that all growth depends upon digestion—we know that only about fifty-five per cent. of the food of a healthy animal is digested. What the *average* animal digests we don't know—but Dr. Hess Stock Food will make every cow, steer and hog digest the largest possible amount of food and convert it into profit. If we fed a cow or steer for the same purpose we feed ourselves, they perhaps would not need a tonic continuously. But we make it a business to overfeed the steer, crowding him to an early market, and that's why they should have something to aid digestion.

DR HESS STOCK FOOD ATONIC

the medicinal stock tonic and prescription of Dr. Hess (M.D., D.V.S.) is just what the overfed animal needs. It does not supply additional protein to make bone, muscle, etc., but it does make the food of the farm produce the maximum amount of growth and milk production, besides curing and preventing stock diseases.

Professors Quitman, Winslow, and Finlay Dun, the most noted medical writers of the age, tell us that bitter tones improve digestion, iron makes blood and the nitrates assist nature in expelling poisonous material from the system. These ingredients make up Dr. Hess Stock Food—isn't this pretty strong proof? But besides this every pound is sold on a written guarantee.

100 lbs. $7.00 25 lb. pail $2.00

Smaller quantities at a slight advance.

Where Dr. Hess Stock Food differs in particular is the dose—it's small and fed but twice a day, which proves it has the most digestive strength to the pound. Our Government recognizes Dr. Hess Stock Food as a medicinal tonic, and this paper is back of the guarantee.

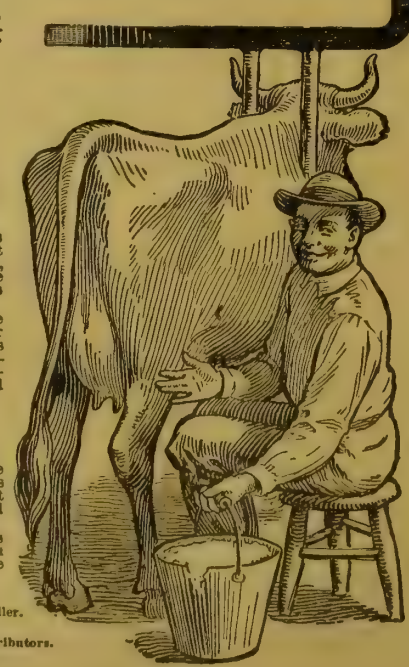
Free from the 1st to 10th of each month—Dr. Hess (M.D., D.V.S.) will prescribe for your ailing animals. You can have his 96 page Veterinary Book free any time for the asking. Mention this paper.

DR. HESS & CLARK, Ashland, Ohio.

Also manufacturers of Dr. Hess Poultry Panacea and Instant Louse Killer.

Instant Louse Killer Kills Lice.

THE PETALUMA INCUBATOR CO., Petaluma, California, Pacific Coast Distributors.



PROPER WAY TO CHURN.

The agitation in churning should be as violent as the form of churn will admit. The churning is to be stopped while the butter is in the granular form. In order to have as thorough churning as possible, the temperature of the cream should not be over 53 degrees.

The buttermilk should be drawn from the churn and the butter washed. The butter must be removed from the churn and salted while yet in the granular form. The amount of salt should be to the taste of the customer. For most people one ounce to the pound is required.

SCOURS IN CALVES.

Take a fresh laid egg, while yet warm, have some one hold the calf's mouth open, then break the warm egg in its mouth. One or two eggs will cure nearly all cases. Five or six eggs cured a bad case in which blood was passed.—"Cultivator Subscriber."

Cock-a-doodle doo! I'm a Checkerboard Chick and these are two friends of mine. See our ad, page 376.

The Vegetable Garden

By ERNEST BRAUNTON

LOCATION OF GARDEN.

THE question of the proximity to the house or other buildings is of great importance when locating the garden. In old homesteads the garden was generally located directly adjacent to the house, requiring but a few steps from the kitchen to reach the extreme parts of the garden.

The work of caring for a garden is usually done at spare times, and for this reason alone the location should be near the dwelling. In case the site chosen for the garden should become unsuitable from any cause it is not a difficult matter to change the location. Many persons prefer to plant the garden in a different location every five or six years.

The lay of the land has considerable influence upon the time that the soil can be worked, and a gentle slope toward the south or southeast is most desirable for the production of early crops. It is an advantage to have protection on the north and northwest by either a hill, a group of trees, evergreen, a hedge, buildings, a tight board fence, or a stone wall to break the force of the wind.

Good natural drainage of the garden area is of prime importance. The land should have sufficient fall to drain off surplus water during heavy rains but the fall should not be so great that the soil will be washed The surface of the garden should not contain depressions in which water will acumulate or stand.

Waste water from surrounding land should not flow toward the garden, and the fall below should be such that there will be no danger of flood water backing up. The garden should not be located along the banks of a creek or stream that will be liable to overflow during the growing season.

A good fence around the garden plot is almost indispensable, and it should be a safeguard against all farm animals, including poultry, and should be close enough to keep out rabbits. A tight board fence will accomplish this result and also serve as a wind-break.

EGGPLANT.

The best soil for eggplant is a warm, sandy loam, well drained, deeply broken and very fertile. The soil cannot well be too rich for this vegetable, and no matter how rich it may be, a generous quantity of manure and fertilizers should be given if the best results are desired. This should be put down broadcast before the plants are transferred to the field.

The seed are sown in hotbeds, and when the third leaf appears are transplanted to other beds, shallow boxes or pots and set 2 inches apart. Before they begin to crowd they are again set further apart and finally transferred to the field.

The eggplant is of tropical origin and very susceptible to cold. From the time the seed are sown until permanent warm weather sets in, a high temperature should be maintained that the plants may not be checked in their growth. The plants are set 3x3 or 3x4 feet if of the large varieties, but 3x2 is sufficient distance for the dwarfs, and even 2x2 is not too close if the dwarfs are not to be used after the standard varieties begin to fruit .

Cultivation should be shallow, frequent and continued as long as the plants will admit of the passage of the plow between the rows. A top dressing of nitrate of soda and muriate of potash applied when the first fruits are forming will be of marked benefit.

Eggplants are gathered for market when from 2 to 4 inches in diameter by cutting the stem with a strong, sharp knife. They are shipped in barrels or barrel crates, each package containing fruits of uniform size.

The New York Purple and Black Pekin are the standard market varieties. The Early Round or Oval are from two to three weeks earlier than the first named varieties; the first is very small, however, and practically worthless when the large varieties come in bearing.

SALSIFY OR OYSTER PLANT.

This vegetable, though planted by few, is not only a delicious but an important one for the home garden. It is available for cooking from early fall until late spring, through a period when there is the greatest scarcity of vegetables.

Salsify requires a deep, rich soil that has been well manured the year previous. Sandy loam is best, though it will grow on the majority of soils, if they are fertil and well prepared. Coarse or fresh manures must be avoided, as they have a tendency to make the roots fork and scar.

Prepare the soil 8 to 12 inches deep, and make it as near as possible the same texture and fertility throughout. The seed are sown thickly in narrow drills 1 to 2 feet apart, and plants left 1 to 2 inches in the drill, or even closer, if the soil is very fertile.

Missing places may be filled by transplanting. The seed should be sown quite early in the spring, and the ground kept free from weeds by frequent cultivation. Salsify is one of the most hardy of vegetables and is rarely winter killed. When it is thought necessary to protect it, two furrows with turning plow may be thrown on the rows in December, or the plants may be taken up and stored thickly in trenches. In the southern portions of the state no winter protection is necessary.

When cooked the flavor of salsify is very suggestive of the oyster, hence its name oyster plant or vegetable oyster. In cooking salsify the roots are first boiled, when they may be sliced and fried, or stewed or made into soup after the manner of cooking fresh oysters.

PREPARATION OF SOIL.

Where there is considerable choice in the location of the garden plot, it is often possible to select land that will require very little special preparation. On the other hand, it may be necessary to take an undesirable soil and bring it into suitable condition, and it is generally surprising to note the change that can be wrought in a single season.

Heads of great men all remind us,
If we go the proper gait.
We may get up of a morning
With a head that's just as great.

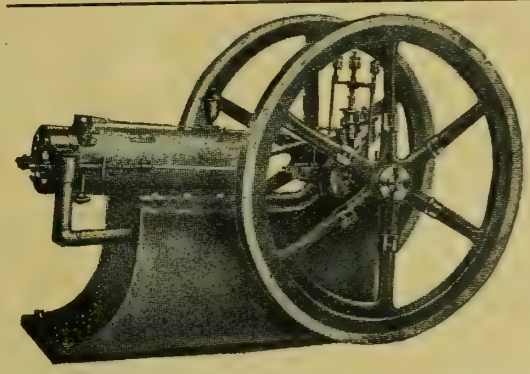
Roofing Troubles! End them with Congo. Leave the old roof there and just lay Congo Roofing over it. It won't cost much; it won't take long.

Everybody who tries Congo likes it the first year, likes it better the second year, is proud of it the third year and gets more enthusiastic after that the longer he waits for it to wear out.

A sample is pretty good evidence. We will send you one free. Ask for it

BUCHANAN-FOSTER COMPANY
Philadelphia San Francisco Chicago

20th CENTURY LIGHT CO.
DO YOU LIGHT AND COOK AND RUN YOUR INCUBATOR WITH ACETYLENE GAS? COME IN AND SEE - OR WRITE ABOUT THE NEW FEED - THAT CLEANS IN ONE MINUTE ONCE IN 6 MONTHS! WE GUARANTEE IT!
HOME OFFICE 609 E. 7th St. L.A. CAL.



Don't Experiment

With untried engines. Buy an engine with a *guarantee* of the *lowest cost for fuel* —the

White & Middleton

Absolutely reliable, tested and proved.

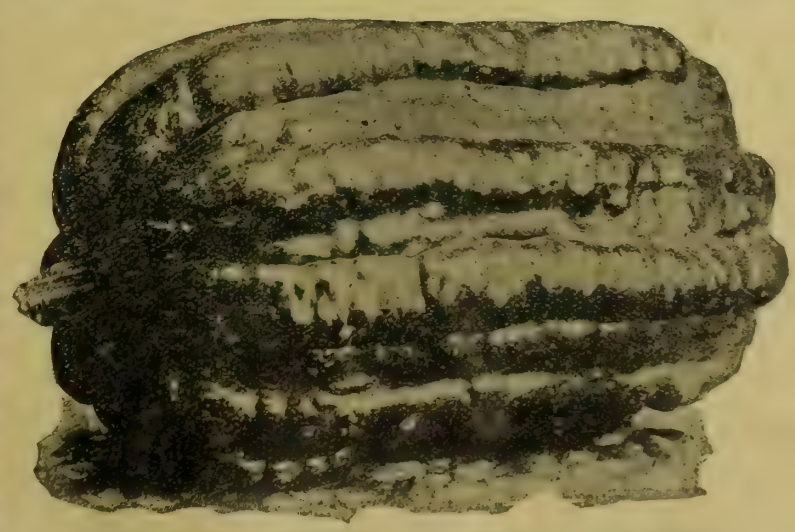
Wm. Gregory
602 No. Main St., Los Angeles, Cal.

Use Tom Lewis' Fertilizer for Orchard, Garden and Field

Free From Weeds My stock is now ready. Immediate shipment guaranteed. Single sacks or carload lots. My testimonials are the finest Send for circular and prices. Office and Works: 1916-1918 10th St., Sacramento, Cal.

Please mention the Cultivator when writing to advertisers.

Chas. C. Navlet Co's Bug Proof Squash



CHAS. C. NAVLET CO.'S BUG PROOF SQUASH—THE SQUASH OF THE CENTURY

THIS is unquestionably the grandest Squash on Earth. It grows strongly and rapidly. It defies the attacks of bugs. It produces colossal crops. It keeps in perfect condition for a whole year. The fruits—of oblong shape—have very rough—and very hard shells, and weigh about 40 pounds each on an average. The flesh is a rich yellow in color, very thick, fine grained, sweet, dry and of surpassing flavor either roasted, boiled, steamed, baked or in pies. It is also one of the finest Squashes for feeding to the stock. We are sure that those who planted Bug Proof Squash this season, whether for family use or market, will appreciate its unequalled merits as thoroughly as we do. Per packet 10 cents—quarter pound 35 cents, half pound 60 cents, pound $1.00 Post paid

Send for our profusely illustrated Bargain Catalogue of FloweringPlants. Seeds, Berry Plants and Fruit Trees.—Its Free.

We sell all varieties of Vegetable Seeds (except Bug Proof Squash) at 3c per packet, and with each fifty cents' worth ordered will give free one packet each of Countess Spencer and Helen Pierce—the two prettiest Sweet Peas yet introduced.

Chas. C. Navlet Co. The Lowest Priced Seed House in California San Jose, Cal.

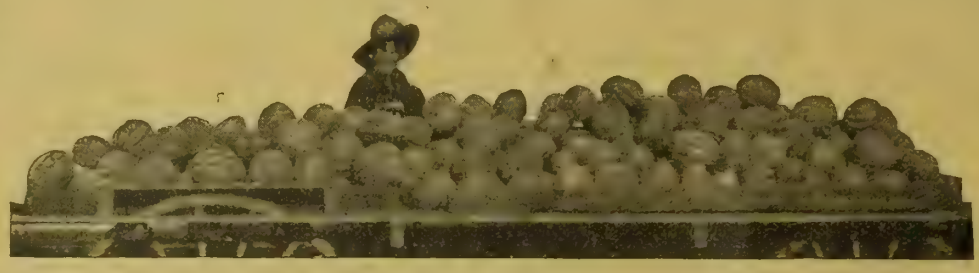
Hurrah for me! I am a Checkerboard Chick. See my ad, page 376.

The New Melon

HAS BEEN NAMED THE

J. & M. Christmas Melon

By Charles Richardson, of San Gabriel, Cal., who was awarded the $5.00 offered by Johnson & Musser Seed Co. for the best name for the New Melon. **Price—Per oz., $2; per pkt., 50c.** Sold only by Johnson & Musser Seed Co.



The Most Popular Musk Melon on the Los Angeles Market. For Two Years

Gautier's Pineapple Musk Melon

Has eclipsed all other varieties to such an extent that ninety per cent of all the musk melons grown for the Los Angeles market are of this variety. **Price per lb., $1.00.** Sold only by Johnson & Musser Seed Co.

Oregon Evergreen Sweet Corn

Last year was the first season this excellent sweet corn was grown extensively for the market, with the result that the newspapers commented upon the unusual excellence of the sweet corn offered by the peddlars. No market gardener will now grow any other variety because Oregon Evergreen Sweet Corn will yield nearly double the crop of any other variety, is less liable to the ravages of the worm and, once having tasted this, the consumer will have no other. **Price—Per lb., 15c; per 100 lbs., $8.00.** Sold only by Johnson & Musser Seed Co.

Eastern Grown Field Corn

We have just received our usual carload of seed corn from Nebraska. It is extra selected and hand-picked. Send for samples of the varieties you wish to plant. Why plant common seed when 25c worth of our extra selected hand-picked Eastern corn will plant one acre. **Price—Per lb., 5c; per 100 lbs., $3.50.** When ordering corn seed to be sent by mail, add ten cents per pound for postage.

The Up-To-Date Seed House

Johnson & Musser Seed Co.

113 No. Main St., Los Angeles, Cal.

Anaheim Chili

Nearly ten inches long

In this chili Southern California should feel a personal pride. It is of local origin, and as we are always on the lookout for the best of everything we discovered this excellent pepper, already popular in the Anaheim section, but little known elsewhere. We now buy the peppers and take the seed from them, so we are enabled to positively guarantee our seed true to name and the best of its kind. **Price—Per kpt., 5c; oz., 25c; per lb., $2.50.** Sold only by Johnson & Musser Seed Co.

TALLERDAY SURFACE IRRIGATION PIPE

SAVES WATER, GRADING AND TIME

The **only** way to **Irrigate Alfalfa. Cheaper** than **Flumes.** This is only **one** of our **specialties.** We make **Riveted Water Pipe** in lengths of **ten feet** from **single sheets.** Let us **prove** to you that we make **Pipe** and **Tanks right.** WRITE FOR CATALOGUE.

TALLERDAY MANUFACTURING CO.

636-7 Pacific Electric Building **Los Angeles, Cal.**

MELON LEAF-BLIGHT.

Fungus is the usual cause of leaf-blight of musk-melons or cantaloupes throughout the country, though downy mildew and anthracnose also occur and sometimes are associated with the leaf-blight.

Leaf-blight begins in small, round spots, which usually show faint concentric rings. These spots enlarge and their effect is very quickly visible on the leaf. The cantaloupe leaf in particular, owing to its thin and delicate structure, will curl at the margins and shrivel up in a few days.

The disease is caused by a fungus closely related to the species causing early blight of potato, leaf-blight of cabbage, etc. It was first studied in this country by Dr. Erwin F. Smith in 1892. The same year it was described from Italy as Alternaria brassiacae, var. nigrescens. Later the same fungus was named Macrosporium; and has been referred to under this name in several experiment station bulletins.

Leaf-blight is spread by spores borne on the upper side of the leaves and carried by the wind and the other usual agents. No perfect stage has been discovered, but it is probable that the fungus lives over winter in the fields, and the experience of farmers indicates that it is worse on fields repeatedly planted in melons. Rotation of crops is therefore advisible to lessen its ravages. This disease does not, as a rule, develop in the field as rapidly as the downy mildew, but in warm, humid weather it spreads quickly and does great harm. The ripening of the melons is hastened, their quality greatly injured, and the total crop diminished.

GARDEN INSECTS.

Some insects are considered more or less spasmodic or sporadic in the nature of their attack and injurious only in seasons which have been unusually favorable to their increase.

A certain proportion of these are for this reason of secondary importance, economically speaking, since in ordinary years of comparative scarcity they find nutriment sufficient for their needs in various wild plants and weeds, being driven to attack cultivated or other useful plants only in their seasons of greatest abundance.

Some few of these are as yet comparatively little known, having done no material damage, but several are increasing in noxiousness, and those which have never assumed great importance are liable to become so at any time, at least periodically or locally. Certain of the species, however, are of the highest economic importance when they occur in excessive numbers, and two of these, the destructive green pea louse and the fall army worm, have been among the most troublesome pests of the past year.

FREE SEED.

The whole custom is a graft, pure and simple. Everyone knows that if it was not for political effect the government long ago would have discontinued this appropriation.

The whole custom is based upon the false assumption that the farmers can be influenced by a few seeds distributed by the government, and the farmers themselves have answered this time and time again by taking emphatic position against this form of graft.

There is no farmer in the country who does not see clearly through this vote-getting scheme. The seed-getting game has played out, and the money could be used much more advantageously by giving it to agricultural schools and good roads.

What's the use? We have told our representatives in congress, time and time again, that we didn't want free seeds. We have denounced it as a graft, but they keep coming just the same. If my congressman sends me any free seeds I'm going to return them by express collect. If all who are tired of the free seed graft will do likewise we can stop it.—E. B.

Is it Purina Chick Food? It must be, it looks so clean and nice. I'm a Checkerboard Chick. See my ad, page 376.

With the Citrus Growers

By J. W. MILLS

THE USE OF GYPSUM.

AN ORANGE grower wishes us to explain the use of gypsum, if it is beneficial to orange trees.

This would depend on circumstances, if it is good for them under any condition. We do not know that it is at all. One use of gypsum in agriculture, is where it fixes nitrogen that is passing off in the shape of gas. Added to the bedding in the stable, it lays all the bad odors which are nothing more than free nitrogen gas in combination with different ferments. Gypsum, which is sulphate of calcium, the base of lime.

Ammonia has a strong affinity for sulphur and robs the calcium of it on sight. It immediately becomes sulphate of ammonia, which is a solid, while the calcium takes up with other gases and is lost sight of in a practical sense. When the manure is piled out in the weather, part of the sulphate of ammonia is washed out by rains as it is soluble in water to a certain extent and so part of it becomes lost. If thrown out in the field or orchard where it is to be plowed under, it will be partly taken up by the soil. Part of the ammonia that takes the form of sulphate from gypsum, will assume other forms in the presence of lime and just what results perhaps no one knows. Here is one use of gypsum. Other uses are not so important to orange growers.

The most important use of gypsum, from an agricultural standpoint, is in converting "black alkali" into "white alkali." Black alkali is carbonate of soda and white alkali is sulphate of soda. The former is corrosive, and most economic plants are fatally injured by its action, especially at the time of germination of the seed. This will be discussed later.

When gypsum, "sulphate of lime," comes in contact with black alkali (carbonate of soda) a chemical change takes place, if water is present. The result is carbonate of lime, which is nothing more than marble dust, which is perfectly harmless and sulphate of soda or white alkali. When chemically pure, both these alkalies are white. The carbonate is called "black" because it dissolves the humus in the soil and takes it along with it in the drainage water. The sulphate of soda does not do so.

It is thus seen that there is a great advantage in applying gypsum when the black alkali is present. It saves the humus that is so valuable to the soil. When the humus goes off into the country drainage, the loss is great. Another advantage is gained in using gypsum. Black alkali packs the soil by cementing it, making it almost impervious to water. It is very difficult to leach it out of the soil, except when a large head of water is rushed over the surface. This takes off a small percentage, but the greater part penetrates the soil only to rise with the water and remain on the surface when evaporation takes place.

Where there is a large percentage of this form of alkali, ordinary rains will not leach it out. With the white alkali it is different. It permits the soil to remain porus and thus it can be drained easily. However, it is useless to enter into a system of drainage, unless there is co-operation among those in the alkali district. The drainage from above will supply the land below with the salt. When there is no suitable delivery for the drainage water, it is of no use to try to free the land of these salts. Soaking the soil without drainage will only carry it a short distance below the surface from whence it will return when evaporation commences.

The most economical way to handle such land is to keep the surface well stirred after each rain, thus shutting off capillary action and stopping the evaporation. This keeps the alkali evenly distributed and thus its deleterious action on the roots is reduced. The deeper this distribution is, the less active it will be. Repeated surface irrigations will wash the alkali down from the surface and very often plants which are very sensitive to it will make a good start, and if good cultivation is continued good crops will be obtained.

Land that is even slightly alkaline is not good for oranges. The orange is soon destroyed by an amount of alkali that will not affect grain. Unless the alkali is admitted to the land in the irrigation water, alkali land is of no value for orange growing as such land is usually in low situations subject to severe frosts. Occasionally, however, an alkali deposit lies in a ledge above choice alkali land. The drainage in such cases is usually so good that it does not concentrate in any area close to suitable citrus situations.

THE ORANGE.

The orange is king of the citrus fruits. It may be treated as a type representing the other members of the group in many particulars relating to soils and cultural methods. In some respects special treatment is required for lemons, limes and pomelos, as described in the sections devoted to these fruits.

The orange will grow successfully in a great variety of soils, yet there are a few essential characteristics of a good orange soil which cannot be overlooked with safety by the prospective grower. The soil must be abundantly moist, but must allow good drainage. It should be deep and rich. It is best to avoid the extremes of heavy and loose texture, though some very heavy soils have been given excellent results, particularly when overlaid by a stratum of lighter character. Shallow soils and those underlaid with hardpan near the surface are unsuited to orange culture.

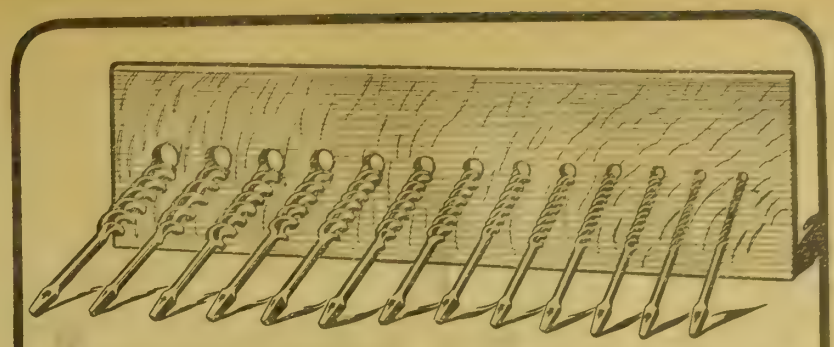
The orange makes very indifferent success of the "hole-in-the-grass" method of cultivation. Where the space is too limited to admit of anything like orchard cultivation the orange will often grow and produce fair fruit, but if a serious attempt is made to grow more than one or two trees they should be placed where their rights to full possession of the soil immediately surrounding them will not be disputed by grass, weeds or other trees. The first step, then, in preparation is to clear the land, if it be occupied by any other trees. If the soil be virgin it would be well to plant some other crop for a year or two, plowing it deeply and keeping it in good tilth. It is important that the soil be worked deeply, for otherwise the trees, when set out, are likely to form surface rather than deep-feeding roots. Surface-rooted plants suffer much from dry weather. Plow deeply, harrow thoroughly, and get the ground in as friable a condition as possible.

CITRUS FRUITS IN HAWAII.

Citrus fruits were introduced into Hawaii more than a century ago. In the record of Vancouver's voyages it is recorded that in the year 1792 that explorer gave to one of the Hawaiian chiefs in Kona "some vine and orange plants" besides other valuable plants and seeds. A few days later "some orange and lemon plants that were in a flourishing state" were landed on the island of Niihau.

These oranges were probably from Tahitian seed, since Vancouver sailed from Tahiti to these islands and records having received large supplies from the natives before his departure. Even earlier attempts at the introduction of the orange and the lime are reported, but it is difficult to say which of the efforts was first successful. Some of the oldest orange trees in the islands are said to have been in a flourishing condition a few years ago at the residence of the late Thomas Brown, Esq., on Kauai.

Oranges, lemons, limes and pomelos have all found a congenial home in Hawaii. Indeed, the orange is sometimes thought of by the casual observer as being indigenous, so eminently suitable have the soil and climate proved to be.

When properly cared for and fertilized some of the native orange trees produce fruits unexcelled in point of flavor and juiciness, bearing little resemblance to the very indifferent specimens often found in the markets, which have been picked green, dumped into casks without curing, and sent into the market.

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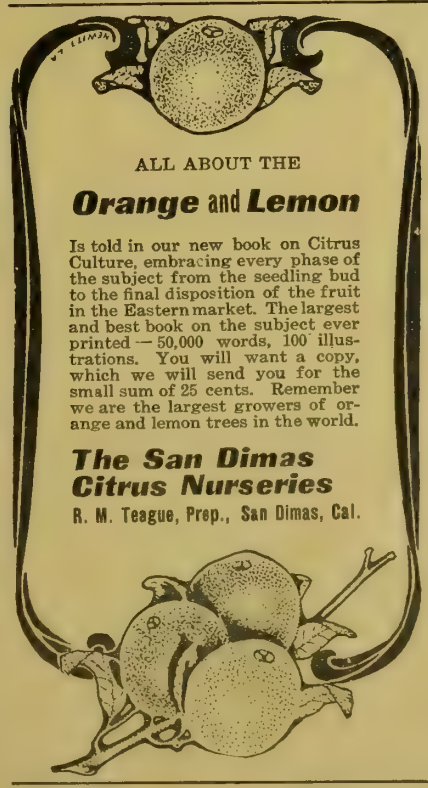

ALL ABOUT THE

Orange* and *Lemon

Is told in our new book on Citrus Culture, embracing every phase of the subject from the seedling bud to the final disposition of the fruit in the Eastern market. The largest and best book on the subject ever printed — 50,000 words, 100 illustrations. You will want a copy, which we will send you for the small sum of 25 cents. Remember we are the largest growers of orange and lemon trees in the world.

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10, 20, and 40 acre lots, from $30 to $100 per acre; terms one-sixth cash, balance in five years. For information and booklet, write F. E. ROBINSON & CO., 216 P. E. Bldg., Los Angeles, Cal.

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I have 1000 Late Valencia year-old buds, running from ⅝ to an inch in diameter, now ready for market. Call and inspect stock or write for prices. Nursery ⅛ mile west of Irwindale, on Covina branch of S. P. R. R.

C. E. Newlan, **Irwindale, Cal.**
Home Phone 2117

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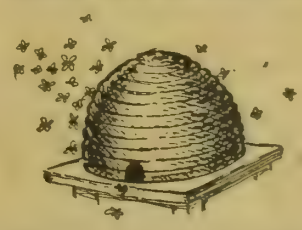

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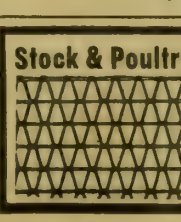

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AN AGRICULTURAL PROBLEM.

Before this issue of the Cultivator reaches its readers one of the most serious problems, in labor, which has arisen in recent years, will have been settled for weal or woe. Fifty thousand employers of forty great railroad lines, covering ninety-five thousand miles of track and an annual pay-roll of three hundred and twenty million dollars, have threatened to strike unless their demands for an increase of wages and shorter hours are granted by the managers of the lines affected.

The managers of these lines say that they cannot grant the demands and there the matter rests —at this writing. The requests of the employees may, in part, be just. They have some color of truth in their averment, but the railroad managers say they cannot concede them because of the recent attacks on the railroads by the government, which has destroyed public confidence in railroad stocks as an investment.

As a general thing, the employees of the railroads in this country are white men, they are above the ordinary class of workmen in intelligence and trustworthiness, and are naturally desirous of bettering their condition. They are to be commended for this endeavor. But the question is, how far can they go in their demand without paralyizing the industrial conditions of the country?

Theoretically, at least, the releasing of an army of operatives should be the farmers' opportunity to obtain help easily and perhaps cheaply. As an offset, however, comes the probability of lower prices for the necessities of life-farm products. Deprive the laborer of his daily pay, and it is quite beyond possibility that he will continue to consume as he had been doing under better pay. With his purchasing power obliterated, or greatly curtailed, he has no alternative but to satisfy the barest claims of hunger; and conversely the market for farm products would then be over-stocked, glutted, and prices, following natural laws, would drop. Gen. Benjamin F. Butler, in his campaign for presidental honors, credited low prices of land produce, not to over-production, but to under-consumption, his idea being there could never be too much produced, but there might be too little consumed. It can readily be seen that the tying-up of fifty thousand men would mean a reduction in the volumn of consumption, which would affect the market all over the country. Let alone the losses, the farmer would incur by reason of his inability to ship his produce to market, he would suffer incalcuable loss by the general stagnation of trade and the failure of the employees, out of business, to purchase commodities of life as of old. We sincerely trust there may be no long-lived strikes in the transportation industry of this country for years to come, because of their widespread deleterious influence on the financial conditions of the nation.

WHAT SHALL THE HARVEST BE?

Tens of thousands of farmers and fruit growers throughout the state of California, are turning anxious eyes toward the earth at this season in anticipation as to what is to be the reward for their labors. As the grain grower views his vast fields of wheat, oats and barley, he gazes earnestly at the growing crops very much alert and mind busy with the expectations and hopes of the coming harvest. But beyond this plowing farmer there stands countless thousands whose feet have never trod plowed land, and they, too, watch the farmers' exertions. "What if his efforts fail?

In some portions of the country his hopes have been dampened from the almost too copious rainfall, and he is anxious lest the harvest shall not return him the bounty promised in the earlier days.

The fruit grower walks among his trees very much alive to the somewhat doubtful outlook that confronts him in the transportation of his crops later on. He feels assured of a bountiful harvest, but is not so sure how he can get that harvest to the markets of the world. In the meantime the business men of the country, from their counting rooms, are taking note of crop conditions, well knowing that the commerce of the nation, its financial institutions, its colleges and universities, its law courts and its churches exist because the man in the agricultural field wrings success from the land. He, alone, among all who tread the globe has power, knows the art of turning dead soil into living crops. Let the waiting thousands who are fed by the farmers' bountiful stores pay willing tribute to his skill. The men who feed and clothe the nations of the earth deserve to be, and must be, more than mere slaves of the soil. They are, as they should be, the kings of the earth.

COST OF CEREAL FOODS.

A correspondent writes asking why cereal foods—breakfast cereals—are so high when the grains from which they are produced are sold so low. He cites wheat in the eastern market at a round dollar per bushel, oats at thirty cents, etc., down the list of grains used in the preparation of cereal foods.

Probably the answer to the question, in the major part, at least, will be found in the cost of putting them on the market and advertising these kitchen commodities.

The extension of the industry has made popular the package idea of kitchens. American housewives take kindly to pasteboard cartons. The sudden growth would have been impossible without cartons. Small pasteboard boxes and large wooden cases, each holding two or three dozen cartons, are very large items in the cost of production, but labor-saving machinery cuts these items down to a minimum. In the food factories the cartons are cut, printed and folded almost automatically; and after they have been automatically filled with cereal food, they are closed with paste by machinery. Only by machinery has it been possible to keep the cartons' cost under a cent a piece. One Chicago factory spends more than $5000 a day on cartons, while another spends considerably more.

In putting a carton of a certain well-known breakfast food on the market, the cost of the cereal product is about 2 1-3 cents, making the cost of manufacture 3 2-3 cents. The selling price to the grocer is 11 1-3 cents, and to the public 15 to 20 cents. One factory uses a piece of paraffine paper to wrap the product inside the carton. This paper costs more than $100,000 a year, but the manufacturers think that American housewives want to have it, and the sale of this particular product would seem to indicate that they are right.

The profit in the sale of cereal foods is large but a market is not to be had for simply the asking. A market can be created and kept in existence only by persistent publicity. It costs from $400 to $800 in advertising to sell $1000 worth of breakfast foods. The man who makes wheat-coffee spent, a year ago, $884,000 in advertising in 800 newspapers and 30 magazines, and this year he will spend a million dollars or more.

The makers of Shredded Wheat spend $700,000 a year in advertising. Another manufacturer $250,000, and the cost of this publicity is, of course, attached to the purchase price of the cereal. So all along the line, and it is this publicity expense, and the carton cost, which figure in the price of our breakfast foods.

We may be inconvenienced somewhat by the copious rains of the season, but think what a reward will come when the crops are garnered. Rain and mud are unpleasant when too predominant, but they are necessary and, therefore, to be endured for the sake of future comfort. The railroads are the worst sufferers, but then their temporary inconvenience and expense in repairs is made up a hundred-fold when the crops go out.

A good farmer will make a good farm of the poorest farm in a township. There is nothing so fine for a poor farm as a fine farmer.

California is taxed heavily by the railroads, but then where would California be without them.

Wright's Green Meadow Dairy
Established 1861

AUCTION
300 Cows and Heifers

Wednesday, April 17, 1907

One Mile West of Watts
Three Miles South of Ascot Park

Sale Begins Promptly at 9:30 A.M.

THIS is without exception one of the finest Dairy Herds in Southern California.

The bulls at head of this herd are **Thoroughbred Registered** and the cows are all selected dairy stock.

200 Cows milking at the present time. Many are exceptionally heavy producers — milking 60 pounds and over per day.

TERMS:

Six Months Time on Approved Note
Liberal Discount for Cash

Old-Time Spanish Barbecue — Free

Teams will meet Pacific Electric Cars at Watts Station

On account of the large amount of stock to be sold, the sale will begin promptly at 9:30 A. M.

COME EARLY.

All will be sold without limit or reserve, as owners are retiring from the dairy business.

Reed & Bennett

BRIGGS & WEBER, Auctioneers
555-557 South Los Angeles Street

No Outside Stock Will Be Sold at This Sale

News Notes of the Coast

Southern California

Cantaloupe vines at Brawley are in bloom.

Orange has had 18.47 inches of moisture.

Saticoy has had 28 inches of rain; Ventura 28.51.

At Rialto it has been damp to the extent of over twenty inches.

Ontario reports a large number of orange grove sales the past week.

Highlands has received more than 20 inches of rain. So has Banning.

San Jacinto and Hemet have had over a foot and a half of rainfall.

This last time Fairmont got .92 inches, making a seasonal rainfall of 27.83.

Chino's rainfall by the last storm was 1.47 making 25.78 for the season. Last season to date it was 19.55.

There should be plenty of peanuts in Coachella valley this year as a great many ranchmen are going to put in a few.

Between forty and fifty boxes of asparagus are being shipped daily by express from Fullerton to the eastern markets.

The express shipments from Escondido for the week were 294 cases of eggs, 3355 pounds of cream, 775 pounds chickens.

Thursday, Friday and Saturday of this week the second annual flower show of the Pasadena Gardeners' Association will be held.

The Tri-Counties Reforestation Committee met at Riverside Monday afternoon at 1:30 o'clock, April 1st to devise ways to replant our watersheds.

To date 1785 cars of oranges have gone forward from Redlands this season. This is just 300 less than had gone forward last season at this time.

Redlands reports 21.47 inches of rain for the season, and San Bernardino goes that a little better with a total of 22.61. Riverside has had 15.76.

D. Bastanchury has made the first shipment of spring lambs from Orange county, sending two carloads to Los Angeles. The shipment netted him $1500.

Lumber is arriving for the new shipping shed of Brawley Fruit Growers' Association. Two sheds will be built, one 310 feet and the other 150 feet in length.

The San Joaquin Fruit Company of Tustin has started on the planting of 140 acres to lemons and oranges. This work will keep a force busy for several weeks.

Nurserymen at Whittier report that they are unable to keep up with the demand for budded walnut stock, and are preparing for an equally big demand another season.

The first pre-cooled car ever sent East from the Pacific Coast left Riverside over the Santa Fe for Chicago, yesterday, filled with oranges from La Mesa packing-house.

Five Riverside boys were fined $25 each with the alternative of a twenty-five-day jail sentence, as the penalty of snowballing last week. Snow is so unusual at Riverside that $25 is cheap for the fun.

The citrus fruit in Southern California which has not yet been picked is in better condition than it would usually have been at this season. The cold weather and continued rains have kept it firm and sound.

The San Jacinto markets quote alfalfa hay at $12 per ton; eggs, 18 cents per dozen; creamery butter, 75 cents per roll; ranch butter, 50 cents per roll; cottonwood brings $5.50 per cord and hardwood, $8.50 per cord.

The downpour during the late storm at Fullerton was 2.25 inches, exactly the same as was the precipitation on the same dates last year. This section has had this season 22.66 inches, against 17.32 at this time last year.

The apricot people about Tustin are feeling very blue on account of the dismal outlook for this fruit, the last two storms having practically ruined the apricots. This is quite a serious loss, as the apricot crop return is always a fine "filler" and it will be missed this year.

Northern California

The Cupertino section has had about 30 inches of rain.

Tulare has had 15.14 inches of rain as against 14.30 to same date last year.

A large sale of wine involving over 100,000 gallons is reported from the Windsor section.

Since January 1st Lindsay has shipped 60 cars of oranges.

W. L. Knoop and Edward Krull of Live Oak lost several thousand sheep during the recent overflow.

The Navarro river was 6 feet higher last week than the oldest inhabitant can remember ever seeing it.

Cattle owners of Amador county met in Jackson last Thursday and formed a cattlemen's association.

Pork on foot is commanding the fancy price of eight cents a pound in the Exeter section at the present time.

The Registered Holstein-Friesian bull Glenbrook De Kol was sold by R. F. Guerin to E. O. Larkins, Visalia.

The Western Creameries Company paid out for cream in Dixon for the month of February the sum of $1,014.09.

The flood did great damage in Oroville and several people were drowned. The water was six feet deep in the streets.

A man near Wheatland by the name of Johnson lost 20,000 head of sheep on the Weaver creek divide during the storm.

Information has been received from Capay valley to the effect that both almonds and apricots have been badly pinched by frosts.

Owing to the flood there is a scarcity of hen fruit and butter in Marysville, and merchants are limiting the quantity sold to one family.

Reports come from the Winters fruit belt that vines have not been injured in any part of the county, but the grape crop will be later than usual.

Dispatches state that 16,000 tons of barley stored in Stockton warehouses have been badly damaged and some of it destroyed by the floods that soaked the grain.

Some of the young beets about Corcoran are already up, and the prospects are for a fine crop. The beets will be shipped to the sugar factory at Visalia.

A great many hop poles about Healsburgh were washed away, but it is not thought that any serious loss has been sustained on account of washing away of the land.

Reports from many hop fields of Sonoma county which were inundated by the great floods are to the effect that many acres of poles have been washed out.

Manager Porter of the Grass Valley Produce company lost 1000 chickens, four head of cattle and a large quantity of feed at his ranch in Sutter county by the floods.

H. S. Weams, a prominent bee man from Wasco, was in Tulare and purchased 200 hives of bees. He will ship them to Ramosa, where he has now about 2000 hives.

Reclamation district No. 208, west of Grimes went out on Saturday afternoon. About 25,000 acres of farming lands are flooded and the prospects for crops this year are poor.

W. E. Perry, of Corning, recently placed 102 eggs in an incubator, and this week 101 lively little chicks greeted him. There was not a cripple in the bunch. Who can equal this?

There are eight breaks in district No. 70 and the stock loss is heavy. The water came over the long bridge on the road between Sutter City and Meridan, and the structure is wrecked.

The Hanford Sentinel is authority for the statement that the wheat barley is growing so rank over in the Mill Creek country that the farmers are compelled to mow or pasture it to check its growth.

L. S. Cnittenden reports great activity in the planting of sugar beets at Corcoran and states that there are a number of teams engaged east of the town plowing and putting in about 1000 acres of the vegetables.

Richest Farm Lands In California

Are those found in Kings and Tulare Counties, where sugar beets, alfalfa and fruit return immense profits.

Dairying

proves highly remunerative and stock raising is better than banking. These lands are selling for $25 to $30 per acre. Profits follow improvements. Over $1,500,000 invested on lands owned, sold and developed by this Company.

Corcoran

The center of this tract of wealth, is a magic town, provided with every advantage of railroads, water and electric lights, and is a marvel for its age.

Security Land and Loan Co.
357 South Spring St. Los Angeles, Cal.
Control These Lands.
Excursion Every Tuesday Night

Chicks Just Hatched We ship them everywhere. Pure Bred White Leghorn Chicks from the Best Egg Producers in the United States

CALIFORNIA INCUBATOR CO., MAXWELL, MAY 27, 1906.
Gentlemen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come so far and being so long on the way without the loss of a single one, but it is an undisputed fact that such was the case We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. CAMPBELL.
CALIFORNIA INCUBATOR CO., 907 Washington St., Petaluma, Cal.

Altadena Buff Orpingtons
N. HAYDEN & CO., BOX 1001, PASADENA
You can win with my stock and eggs because I have won and am winning. Matings this year very fine. Inspection invited Write me your wants. Eggs $2, $3 and $5 per 15.

It isn't what an **Incubator Did**
It's what an **Incubator Does**

Suppose you invest in an incubator, fill it with expensive eggs, waste time and bother on it and find the eggs don't hatch?

It wouldn't be much satisfaction to you to know that the incubator had given big results to some one else.

Buy a Glendale Incubator and Brooder

and get the maximum results yourself. They are not complicated like many others, and for that reason there is practically no chance to make a mistake. Everybody has the same splendid success with Glendales. The "Glendales" do their work automatically and thoroughly.

Glendale Incubators and Brooders cost less than any other first class machines. They are revolutionizing poultry raising.

The 120-egg size $22; 240-egg size $32; 360-egg size $42; 500-egg size $52.

We want you to attend a free demonstration now being conducted. If this is not convenient, write for catalogue.

Johnson & Musser Seed Co.
Dept. 8
113 No. Main St., Los Angeles

Poultry Supplies

Pacific Incubator Company

has opened a store in Los Angeles for the sale of

Incubators
Brooders
and a full line of
POULTRY SUPPLIES

New, fresh stock at the lowest prices. Come and see us or send in your orders.

Before buying you should see the
"Business" Incubator

Capacity 100 eggs, $10 delivered. Hot water, copper boiler, nursery, Best Sheer Regulator; everything the best. No mahogany, no frills, no furbelows.

The "Business" is built for business, and it does the business every time. Come and see it.

707 So. Spring St., Los Angeles

PLANT STRAWBERRIES
You can still plant strawberries for a few weeks. Burbank Beauty (early) $3.00 per 1000, and Brandywine (midseason) $2.00 per 1000; 25 percent discount on 10,000 or over
Fairview Farm Nursery, Burbank, California

BUFF ORPINGTONS
Start with the best. I have a pen of Buffs of Commonwealth strain from prize-winners. Can spare a few eggs; $3 per 13 eggs; 90 percent fertility.
Mrs. N. F. Morse, Fullerton, Cal. R F D. 1

FOR SALE
1500 Valencia Trees
One year from bud. First-class in every respect. Buds from smooth-fruited bearing trees.
Keith or L. N. Suydam, Glendora, California

SET Incubators and Hens with Eggs from good, healthy, farm-raised
White Minorca and White Wyandotte Stock
S. W. MORGAN, Sunnyside, California, has such. Price $1.50 setting, $7 per 100

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H. J. Mercer
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Buy the World's Famous Egg Food No. 4

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IF YOU WANT EGGS
YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and breed. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for greatest batch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. FILCHER, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

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Main Offices and Factory, Petaluma, Cal., Box F.
Los Angeles, 565 South Main Street.
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S. C. White Leghorn Eggs

For Hatching, from Captain Mitchell's Strain.
Large Birds. Prolific Layers. Large White Eggs.
Order Books Open for 1907 Season.

The Lincoln Avenue Poultry Yards

Carl C. Curtis, Owner, Pasadena, Cal.
Successor to Captain E. Pryce Mitchell
Lincoln Ave. and Ventura St.—Altadena Cars

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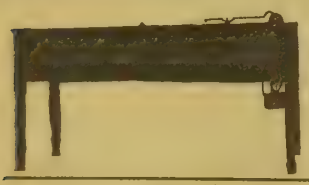
Excelsior Chick Food

Excelsior chick food is a perfectly balanced ration for your growing chicks. Will raise the largest possible per cent. of your baby chicks. All pure food, no shriveled grain and filler used in its manufacture. Absolutely clean and free from dust. No waste.

The Best Food on the Market

Ask for Excelsior. If your dealer cannot supply you write us. Circular free if you mention the Cultivator.

Del Monte Milling Co., 242 Central Ave., Los Angeles, Cal.



For a **Practical Pointer** in **Poultry Profits** use the **Principal**

They Are the Best on Earth
Principal Incubator Co., Graton, Cal.
Send for New Price List

Best Incubator

On the Coast—best anywhere. Made right—prices right. Guaranteed. Catalogue free. Also great **Combination Brooder.** It is great—both indoors and out.

Pacific Incubator Co.

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707 So. Spring St., Los Angeles

Also for sale by
Johnson & Musser Seed Co.
113 North Main Street

Improved
PACIFIC

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Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

HATCHING HATCHABLE EGGS.

THE brighest and best thing in chick culture is (says Poultry Husbandry) that many men and women are thinking about fowls and how to manage them for the best results. Thousands of people are studying and working on poultry problems. The calling is advancing and its progress during the coming years will show many striking improvements and developments.

"Live and learn," is a favorite proverb with me. We can learn, not only by our own experiences, but by the experiences, losses and failures of others.

Unsatisfactory Hatch.

"Can you tell me," writes an enquirer this week, "why my eggs do not hatch?"

He is hatching less than twenty-five per cent. of the eggs that he is putting into his incubator. It seems to him that instead of having a sure hatch that his incubator is sure not to hatch; he writes to me for help. He is not the only one by any means in trouble and in answering him I help others.

There are many reasons for eggs not hatching as I have already mentioned. Of course the first of these is infertility of the egg. To have fertile eggs is the first consideration. Fertility can only be attained by having vigorous and healthy fowls. Fowls that are fed for fertility.

Feeding for Fertility.

How do you feed for fertility? Consult Nature! Nature feeds her wild fowls in the Spring, the only time when they need fertile eggs, with tender, green grass and leaves and with an abundance of animal food. For in the springtime grubs and bugs, which have lain dormant during the winter are coming to the surface to commence to propagate and ravage the flowers and fruits.

There are but few grains in the spring and most of those are sprouting. Imitate Nature if you want healthy and strong fertility. Give plenty of green food and a liberal supply of meat or something that is equivalent. You may possibly by neglecting this get some few fertile, but rarely hatchable eggs (note the difference), for it is hatchable eggs we all want at this time of year.

Hatchable Eggs.

To illustrate what I mean by hatchable eggs; a case of eggs was sent to the "Gardena Hatchery" to be hatched. The expert owner and manager refused to accept them. "Those eggs are not hatchable," he said. They were thin, pointed eggs, "narrow waisted," with too little "protein" in them and the expert knew by experience that such eggs would not hatch and that there was no use trying to hatch them.

The owner of the eggs admitted he hand not been able to have a good hatch this year, but did not know the cause of it. What could he do? Sell those eggs for market purposes and go home, feed his fowls more protein, a better balanced ration for fertility, that would be more meat and all the green food that the hens wanted.

Feed your fowls for fertility, have them clean from lice, vigorous and healthy, give them penty of grit to grind the food and make the egg shell, and then choose the eggs that are plump and well shaped, with good, smooth shells. Examine them through your egg tester, or if you do not have one, take a roll of paper or a roll of music; hold the egg at one end and your eye at the other.

If the egg is in a bright light, like the sunshine, you will be surprised at what you can see. Reject all eggs for hatching that have thin shells, or those with thin places or such as are freckled all over with thin spots. These will only not hatch, but they will be cold and will draw from the vitality of the eggs that may lie next to them in the tray; they are detrimental to the rest of the hatch.

I know too well the disappointment of filling an incubator with eggs, tending them most carefully for twenty-one days and at the end carrying out a bucketful of eggs for burial. I can sympathize with our enquirer and I have learnt to take as few risks as possible.

Lessons Learned.

Some lessons that I have learnt are: First, to have healthy parent birds; secondly, to feed for fertility, giving a plentiful supply of grit, charcoal and oyster shell; of these grit is the most essential. If I cannot get crushed oyster shell, I mix lime in water about as thick as pancake batter, let it stand twenty-four hours and then pour it on the ground, about a pint in each yard; it soon dries like a big pancake and every day I crush a bit off it for the hens to eat. This will make firm egg shells.

After my fertile eggs are laid I gather them twice a day or oftener. I never leave them in the nests for the other hens to use as nest eggs, it may start the germ to growing with baneful consequences. I keep the eggs in a moderately cool, dark, quiet place, never in a draft and I never keep them over two weeks, for I want to be sure of a good, strong hatch and the fresher the egg the better the hatch.

I have written so much about properly incubating eggs in the last year that I will not add more to it, but will only say a few words in reply to our enquirer's question. "Why do I have so many chicks dead in the shells?"

Chicks Dying in Shell.

All who have studied the important matter of why chicks die in the shell have their own theories on the subject, so I may be allowed mine. There are two principal causes for this mortality. First, insufficient or faulty ventilation and secondly irregular-

C. J. Ferris
BREEDER OF THE FAMOUS
Buff Plymouth Rocks
Winners of Five Prizes at the late Los Angeles show, the largest show ever held on the coast. A few choice cockerels for sale. Eggs, $2 and $3 per 13. Write your wants.
San Gabriel, California

East San Gabriel Egg Ranch
S. C. WHITE LEGHORNS
BARRED P. ROCKS
Eggs for hatching $1 per 13 $5 per 100 We breed from two year old hens, and the best ones of the flock only. No stock for sale. Ranch two blocks south San Gabriel car line.
Swanson & Johnson *San Gabriel, Cal.*

Eggs For Hatching
FROM
Standard Bred Poultry
Buff and Brown Leghorns, Buff Orpingtons, Columbian Wyandottes and Bronze Turkeys
W. W. Bliss, Duarte, Cal

1907 LOS ANGELES 1907
We won on White Rocks, Barred Rocks, White Wyandottes, Buff Leghorns, White Crested Black Polish.
EGGS FOR SALE. SEND FOR CIRCULAR.
Golden Crest Poultry Ranch.
Box 412 Santa Ana, Cal.

East Side Poultry Yards
Have pure bloods. Eggs for hatching. Hatching chick a specialty.
Barred Rocks Buff Orpingtons
Prices Right
E. J. Look
16 Hancock St. E. San Jose, Cal.

COLUMBIAN WYANDOTTES
Won 1st Cock, 1st Hen, 1st Cockerel, 1st Pullet, 1st Pen and all Special Prizes at San Jose Show in competition with birds from Southern California. *Eggs, $2.50 per Setting. Stock For Sale.*
R. Walker Mantz, Rural 21, San José, Cal.

S.C. White Leghorn Eggs for hatching $5.00 per 100. Large birds.
Good Laying Strain
Take Redondo car via Gardena to Strawberry Park
Stanley Senter, Gardena, Cal.

WHITE, BUFF COLUMBIAN WYANDOTTES
And Golden Sebright Bantams, prize winners
Stock and Eggs in season
M. E. Dillingham, Box 67 San Gabriel, Cal

Buff Plymouth Rocks
A few fine cockerels $2.00 each. Eggs $2.00 for 15 Very choice Eastern stock.
R. F. D. 1 F. W. Tutin, Riverside Cal.

Santa Ana Poultry Ranch

LINE BRED

WHITE PLYMOUTH ROCKS

EXCLUSIVELY

We won as follows at the Poultry Breeders' Society Show: 1st Cock, 1st, 2nd, 3rd and 4th Hens, 2nd and 3rd Cockerels, 4th and 5th Pullets and 2 Silver Cups.

Some Extra Choice Cockerels For Sale. Eggs, $2.50 per 15, $10 per 100.

RHODA E. DURFEE

1110 W. First St., Santa Ana, Cal.

SILVER LACED WYANDOTTES

At the recent Poultry Breeder's Show we won eight ribbons on eight entries. "The best quality seen here for years, 1st cockerel has the best marked wing we have seen." -Pacific Fancier.
Eggs $1.50 per 15.

WHITE PLYMOUTH ROCKS

Grand laying strain, large vigorous stock. Eggs especially recommended for incubator hatching, $1.00 per 15, $5.00 per 100, special mating $1.50 per 15.

FAIRVIEW POULTRY YARDS

I. E Nelson, El Monte, Cal.

Eggs for Hatching

Thoroughbred White Rock eggs for hatching at $1.50 for 15. $6 per hundred.
Mammoth Bronze Turkey eggs, 20 cents each.
Also a dozen choice W. R. cockerels and two M. B. gobblers for sale.

Jennie R. Frater Charter Oak, Cal.
Home Phone 2179

THOROUGHBRED S. C. White Leghorns

They are vigorous and healthy and great producers of large white eggs. They have good size, rich yellow legs and bills. Eggs from special mated pens, $1 per 15, $5 per 100

W. R. BENJAMIN

8 Palmetto Ave. Sacramento, Cal.

Mount Holly Poultry Yards

Rose Comb Black Minorcas FANCY AND UTILITY

Won at L. A. C. P. Show, 1906, 1st Cock, 1st Hen. 1907, 1st Cock, 1st and 2nd Hen, 1st and 2nd Cockerel, 1st Pullet. Eggs, $2, $3 and $5 per setting.

C. F. BAILEY

P. O. No. 2, 1361 Benefit St., East Hollywood, Cal.

White Rocks and Black Minorcas

They are beautiful birds; Rocks as white as snow, Minorcas black as a crow. Cocks from W. M. Humphrey's and Harry E. Rose's yards. Eggs for sale. Best pen, $1.50 per setting of 15, or $7.00 per hundred. Second best, $1.00 per setting of 15, or $5.00 per hundred.

Chas. S. Hunt, El Monte, Cal.

Prize Winning White P. Rocks

Won 1st on cock, 1st on pullet, special for best pair, Petaluma Incubator for best pair in American class at Los Angeles show, 1907, the largest ever held west of Chicago. Stock and eggs for sale.

AMELIA W. SLY

"Oakhurst" R. D. 1 Hollywood, Cal

O. K. Trap Nests Shows the hen that lays the eggs and keeps her from eating or breaking it after it is laid.

O. K. Feeder Just the thing for your Scratch Shed. Send for circular explaining its workings.

C. B. Williams

Box B Ontario, Cal

COLUMBIAN WYANDOTTES

Winners at Breeders' Great Show, 1907. 21 prizes on an entry of 26 birds. Stock for sale, also eggs $3 and $5 per setting of 15; $20 per 100.

Ed. M. Burnell, South Pasadena, Cal.

DECIDE NOW

Eggs from Rich Golden Buff Wyandotte Beauties

Ribbon and Cup Winners. $2.50 and $4.00 per 15, $10.00 per 100. Guaranteed.

O. S. HOFMAN

Box 133, San Jacinto, Riverside Co., Cal

Moss & Tate, Altadena, California

Breeders and Importers of

Buff, Black, and White Orpingtons

Have for sale Trios, Cockerels and Pullets. Eggs for hatching, settings or hundreds. Write or call.

Two Blocks North, One Block East Altadena Post Office

When writing advertisers mention Cultivator

ity of heat. Years of study and experimenting have convinced me of this.

In some incubators there is scarcely any ventilation, there may be a ventilator or hole somewhere, but does it ventilate? Does it exclude the carbon dioxide, that poisonous gas that the eggs throw off? Does it admit the pure oxygen so necessary to the life and health of the embryo in the egg?

At one time I was operating three different makes of incubators, all had so-called ventilators, holes at the top or at the bottom or sides, but I could not discover any circulation of air and after many trials I decided that the only way to succeed in getting good hatches was to air both the incubator and the eggs thoroughly and frequently. I therefore aired and turned the eggs three times a day and at the same time I fanned the stale air, the carbon dioxide, out of the incubator. The result was a 99 per cent. hatch, which confirmed my theory.

Extreme Measures.

The expert whom I have already mentioned told me that last year a lady he knew was having very poor hatches, she had the same incubator that our enquirer is using; he advised her to leave her eggs out of the machine for two hours every day, putting them into the sun. She had been having such poor hatches that she felt desperate and was ready to try anything. She followed his advice and had a fine hatch.

I have had hens that sat too closely on their eggs and had chicks dead in the shell or cripples. I know this is rare. I have had hens that would remain upon the nest forty-eight hours or more; those hens invariably had poor hatches, whilst the hens that would stay off the eggs long enough to cause me anxiety had excellent hatches.

One cause, therefore, of the poor hatches is, I believe, faulty or too little ventilation. Faulty ventilation would include too strong or swift a circulation of air in the incubator; this would dry out the egg too much and weaken the chick. I would rather have insufficient ventilation and trust to airing the eggs myself, than have the eggs in a draft.

Equable Temperature Necessary.

Irregularity of heat in the incubator kills many embryo chicks and towards the end of the period of incubation it cripples many. In operating an incubator, remember that 106 degrees is danger point during the first week; also that after removing the infertile eggs or the dead germs, the thermometer must be closely watched, for there will be a rise in the temperature and the regulator will probably have to be adjusted. During the last week of incubation too high a temperature continued for some time will invariably result in cripples, or sprawlers.

"I had no cripples in my last hatch," writes a friend.

That is good, that shows that the temperature was right and that the chickens were well hatched. A well hatched chicken is one whose digestive organs, whose heart, lungs and liver have not been over-taxed during incubation, have neither been chilled nor over-heated and consequently are in a healthy and vigorous condition, ready to commence life with good prospects of success.

Irregularity of heat is frequently caused by inferior oil in the heating lamp. Get the best oil that you can buy. The best is none too good and the life of one or two chickens would more than pay the difference in the price of good or bad oil.

Breeding.

Would it be good to use a cockerel in my breeding pen that has any colored feathers. He is a White Wyandotte.—J. F. Y.

If you are breeding for exhibition stock it would be better to use a pure white male. It is always best to keep to the Standard.—Mrs. A. B.

Of course I feel good for I'm a Checkerboard Chick.

See my ad on page 376.

Beef Scraps

GUARANTEED ANALYSIS :

Protein 65%
Fat 8%

Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

Raw Bone

GUARANTEED ANALYSIS :

Protein 25%
Phosphates 45%

Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods

WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

The Largest Poultry Supplies House in the United States

Peerless Chick Feed

Is the Cleanest and Purest Chick Food possible to produce and insures

Health and Rapid Growth in Baby Chicks

GRANULATED MILK—the Pure Protein Food

315 S. Main **HENRY ALBERS CO.** Los Angeles

Maud S, 1st Prize Hen, San Jose
Bred and Raised on My Ranch

Baldwin's White Leghorns

Baldwin's Leghorns are all right in blood lines and for heavy laying right straight through the year they are unexcelled. I breed nothing but White Leghorns and make them a study, aiming at quality and market value combined.

My yards are modern in every respect and I invite inspection. Think of us when you think of White Leghorns.

My best pens are made up of stock from the first prize winners at the great show at Madison Square Garden, New York, 1905 and '06.

All stock sold on a guarantee to be as represented.

Eggs, $1.50, $2.00, $3.00 and $5.00 per setting (15). Incubator lots, $6.00 and $10.00 per 100. My $6.00 eggs are from selected yards. My $10.00 eggs are from especially selected matings of my finest birds.

Send for catalogue giving full description and prices of my matings and show records.

Frank E. Baldwin *The White Leghorn Specialist*

Phone Suburban 82 46 Washington Ave., San Jose, Cal.

200-250 Egg Fowls | **WHITE WYANDOTTES** | Eggs Ready Now

10 Highest Scoring Birds, Seattle, 1907
Winning over the cream of the North Coast

Four Firsts and all the Big Specials at San Francisco
Pronounced by the National Expert Judges equal to any in the United States

1907 Catalogue and Mating List Free.
Eggs and Stock. Clears Replaced. Expressage Paid.

CAPITOL AVENUE POULTRY FARM

A. L. R. MANTZ **Rural 21, Box 98k** **SAN JOSE, CAL.**

Chas. E. Smith Breeder of *Arrowhead Strain* of

Barred Plymouth Rocks

Won at Los Angeles Show, the largest ever held on the Coast, 225 Barred Rocks in class, as follows: 1st, 2nd and 5th Pens; 1st, 3rd, 4th and 5th Hens; 1st, 2nd 3rd and 4th Pullets; 2nd Cockerel. Barred Rock Club Cup for Best Display; Association Cup for Best Display, and Three Incubators, one for Best Pen in Show, all breeds competing.

Choice Stock for sale from same mating that I bred my prize winners from. Prices reasonable. Eggs, ***$3*** and ***$5 per 15.***

Chas. E. Smith, Gardena, Cal.

Take San Pedro electric cars via Gardena to Smith's Crossing.

THE FEATHERLY FARM ORPINGTONS

BUFF BLACK WHITE

Our yards are now mated for the season; containing winners of nearly 100 Prizes, Specials and Cups at California's leading shows. Our handsome Mating List and Catalog describes them all. Send for it today; it is free. Our birds are bred for utility and heavy egg production as well as beauty. All egg orders booked in rotation. Satisfaction guaranteed.

P. L. Harley, Box C, Redlands, Cal.

8 Varieties of Wyandottes

Each Bred on Separate Farms. Quality Best. Eggs and Stock guaranteed. For particulars write for catalogue.

Queen Poultry Co. **Box 2, Los Angeles, Cal.**

S. C. White Leghorns

Eggs, $1.00 and $1.25 per setting of 15; $4 and $5 per 100. High fertility guaranteed.

C. C. Hockabout **Watsonville, Cal.**

MY EXHIBIT OF
WHITE, BUFF AND PARTRIDGE **Wyandottes**
Won 26 Ribbons and Special Prizes at the Poultry Breeders' Show, 1907
R. D. Box D87 **L. E. BERKEY,** Fullerton, Cal.

What a Noted Poultryman Says:

"I would rather have a POOR bird well fed than a GOOD bird poorly fed, but take a good bird and feed it PURINA FEED and you're bound to build a winner every time."

Now, there's a reason for this. And the reason is that only the BEST grain and other ingredients go into PURINA POULTRY FEEDS, which are balanced scientifically for the building of frame, feathers and eggs.

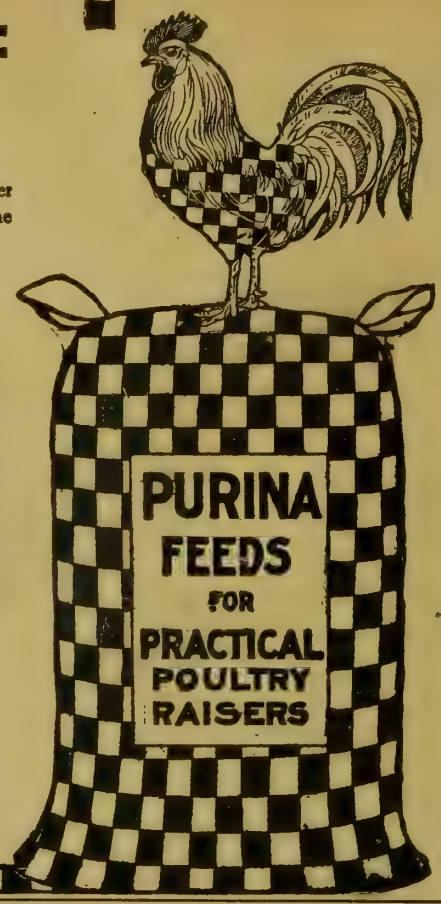
THE CHECKERBOARD BRAND

Stands for the Best in Poultry Feeds

You will always find PURINA POULTRY FEEDS put up in CHECKERBOARD BAGS so that you can't mistake them, and in the Checkerboard Bag you'll find the best Feeds on the market. They're made by the Purina Mills, by the people who KNOW HOW from experience. Don't take inferior feeds when you can get the best.

A Perfect Feed for Every Purpose: Purina Baby Chick Feed saves the little chicks; Purina Egg Food makes hens lay; Purina Scratch Feed has the largest variety of the best seeds, properly proportioned.

Ask your dealer for THE CHECKERBOARD BAG and insist on having it. Take no substitute. Don't let anybody make you think something else is just as good. If your dealer doesn't handle our feeds, then send us his name and we will send you samples and a copy of the "Feed on the Purina System."



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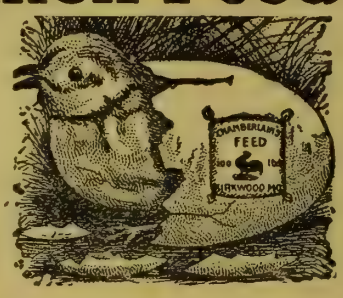
3 MILLS—CAPACITY 18 CARLOADS DAILY

Chamberlain's Perfect Chick Feed

World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This is the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.



NOTHING JUST AS GOOD.

GERMAIN SEED CO.,

Pacific Coast Agents. LOS ANGELES, CALA.

SPECIAL PRICES ON TON LOTS.

WHITE MINORCAS

Won at Alameda Poultry Association Show, 1907: 1st Cock, 1st Hen, 1st Pullet

EGGS FOR SALE—$2.50 per Setting of 15; Two Settings, $4.50; Incubator Lots $10 per 100.

A Few Cockerels For Sale. Prices on application to

Coulson Poultry and Stock Food Company
Petaluma, California

Germain Seed Co., Los Angeles, Distributing Agents for Southern California

The White Faced Black Spanish

Are famous as layers of large white eggs at all seasons of the year. We won all prizes at the Breeders Great Show, 1907. Choice Cockerels For Sale, $5. Eggs, $1.50 per 13, $4 50 per 50, $8 per 100. Special matings, $3 per 13. Fertility guaranteed.

Mrs. W. H. O'Connor **Lock Box 112, Dolgeville, Cal.**

Starbuck's Barred Plymouth Rocks

We Trap-Nest Our Hens. Bird Laying Qualities are inherited. Why set from poor layers? We use pedigreed cockerels whose mothers have for over six generations laid over 200 eggs per year. Eggs from old hens, $1.50 and $2.00 per setting of fifteen; from pullets $1.00 per setting of 15. No sales or visitors Sundays.

Wm. Starbuck **-** ***Fullerton, Cal.***

EGGS

Ringlet Barred Rocks $1.50 and $2.00 per sitting 15. Black Minorcas (Albert strain) $1.50, and $2.00 per sitting 15. Mammoth Pekin Ducks $1.00 and $1.50 per dozen.

EDWARD A. HALL, **WATSONVILLE, CAL.**

Spargur's Trap-Nested
White Leghorns

Eggs from 200-Egg Hens, $1.50 per 15, $6.00 per 100
From Second Best Pens, $1.00 per 15, $5.00 per 100
Indian Runner Duck Eggs $1.00 per 13, $5.00 per 100
Blue Andalusian Eggs, $2.00 per 15, prize winning birds

H. G. Spargur - Soquel, Cal.

White Leghorns

WHY PAY more when you can get Eggs from Selected Pens of a Heavy-Laying Strain for $1 per 15; $1.80 per 30; $2.50 per 50; and $4.75 per 100?

Arthur E. St. Clair **Lordsburg, Cal.**

BARRED ROCKS

EXCLUSIVELY

Send for Sixteen-Page 1906 Catalogue

H. R. CAMPBELL
BOX O PETALUMA, CAL.

GEORGE W. POPPELWELL

Successor to C. H. Robbins

Breeder of White Leghorns, Black Minorcas and Barred Plymouth Rocks. Eggs for hatching, $2 to $5 per setting. Single birds, trios and breeding pens a specialty.

Yards at Ranch (10) Phone Main 1583
943 W. Fremont St., W Stockton, Cal.

SHADE'S RHODE ISLAND REDS

The World's best layers.
Write for Folder.

J. W. Shade. **San Bernardino, Cal.**

THE POPULAR ORPINGTONS.

Not since the Plymouth Rocks can into favor a quarter century or so a has any breed met with such wid spread favor as that which hailed t coming of the Orpingtons.

That this was no spasmodic wave favor is evidenced by the rapidly grov ing number of poultry breeders who a taking up these fowls to the exclusio

First Prize Buff Orpington He
Los Angeles, 1907.
Owned by Featherly Farm, Redlands, Cal.

of their long cherished pets in othe breeds.

California now boasts some reall magnificent poultry farms and way u at the top of the list is the Featherl Farm of Percy L. Harley of Redlands We had almost left the e out of th name because of the fatherly interes

Black Prince
Imp. Black Orpington Cock, Winner of Three First
Owned by Featherly Farm, Redlands, Cal.

our friend shows for the welfare o his flocks.

He is really untiring in his devotion to their well being and in return fo this watchful care has been rewarde by his fowls capturing long strings o prizes, because they felt so good the just had to look their best, not only their best, but the best in the show.

Last year Mr. Harley won 30 prize on 30 entries. This year he won 6 prizes, including 27 first and 20 second and thirds. Anyone looking for Buff Black, or White Orpingtons must visit Mr. Harley's Featherly Farm at Redlands, if he wishes to see the best egg-laying strains combined with the highest standard of perfection in form and colors.

FORTUNES IN DAIRYING.

Passing of the oldest dairy in Southern California. On the 17th of April, the Wright Bros, Green Meadow Dairy, located one mile west of Watts, will be sold at Auction. This sale deserves more than passing notice, as the dairy was established in 1861.

Mr. Geo. W. Wright bought the neucleus of the herd across the plains in 1861, and located at the present site, owning about 1000 acres. His sons have all made fortunes in the dairy business. The father retired in 1879. Reason and O. F. in 1885, J. C. in 1899, and S. L. in 1906. At present the dairy is under the management of Messrs. Reed & Bennett, two progressive dairymen, and Mr. Wright informs us that there never has been any contagious disease in the herd. There are 300 head of fine milk cows, large producers, many giving 60 pounds per day.

Mr. R. R. Briggs, of the firm of Briggs & Weber, auctioneers, will be on the block, and expects to sell a cow a minute. Sale at nine thirty A. M. prompt. We call the attention of our readers to their "Ad." on page 372.

You'd better see my ad, page 376, for I'm a spunky little Checkerboard Chick.

Irrigation and Pumping

RAINFALL AND IRRIGATION.

THE amount of rain and the time it falls are clearly the most important factors in determining the necessity for irrigation. Absence of rainfall makes a desert of the richest soils at all elevations and at all exposures.

Its only remedy is irrigation. But there are degrees of poverty in rainfall, and thorough tillage will often lessen the ill effects of a scanty supply, so that an oasis may be made to appear without water beyond that supplied from the clouds. This is the triumph of tillage in the arid region which is to be considered in another connection.

The line between adequate and insufficient rainfall cannot be closely drawn. If one should undertake to determine the need of irrigation by the local rainfall figures alone and proceed to investment on that basis, he would be quite likely to lose his time and money. This has already been suggested in speaking of the relations of soils and irrigation.

It is obvious that there must be somewhere a point at which the rainfall is insufficient for the needs of crops, and another point beyond which it becomes ample or even excessive. But these points are not fixed. They vary with the character of the crop, the soil, exposure, the distribution of the rainfall through the year, and the local temperatures which fix the length of the growing season.

With reference, however, to the growth of common orchard fruits, which are alone in view in this discussion, irrigation is not resorted to at a number of points where the local rainfall sometimes is as low as 15 or 16 inches, but that with less than that amount, unless the soil receive additional moisture by underflow, it is essential. On the other hand, irrigation is regularly practiced in some localities where the rainfall sometimes rises to 45 inches.

A study does afford, however, ample evidence that, under average conditions of soil depth and retentiveness in the region under consideration, the amount of rainfall which may be considered adequate for orchard trees under good cultivation is abount 20 inches.—Prof. E. J. Wickson.

IRRIGATION PRACTICE.

On the famous river-bank fruit land of the Sacramento valley, with loams of great depth and good retentiveness, and with an average rainfall of approximately 20 inches, irrigation is resorted to only in years of minimum rainfall, when the precipitation is perhaps only about half the average.

At nearly the same level, where the soil is shallow and overlies hardpan, regular irrigation is required. But still more marked contrast is found in the foothills within sight of these valley fruit lands, where with twice the average rainfall irrigation must begin early in the summer and continue until autumn is well advanced, because, first, the slope is so rapid that much rainfall is lost by run off; second, the soil is too shallow above bed rock to hold much water.

Even here, however, there comes in a local variation of measurable effect. When the soil lies upon vertical plates of bed rock much water is retained between them and is capable of being reached by tree roots, while soil lying upon flat plates of rock has no such subterranean reservoir. In the foothill region there also occurs exceptional exposure from slopes facing the mid-summer sun in an atmosphere whose dryness is but slightly ameliorated by the influence of air currents from the coast.

In the valley and foothill contrast, just cited, the unirrigated valley looks up to the irrigated foothills. There are also places where unirrigated hill slopes look down upon irrigated valleys.

The uplands of San Diego county are nearer the coast than those above the Sacramento valley. They, too, have a rainfall usually ample for deciduous fruits suited to their elevation.

Their rolling plateaus of deep soil, free from excessive heat and evaporation which occur on highlands farther inland and 500 miles farther north, produce very successfully without irrigation. In this region, however, the rainfall in the valleys below is often less than the needs of even deciduous fruit trees, and waters flowing from mountain snows through a region of unirrigated uplands must be used to irrigate them.

Still another striking contrast, and one involving another and wholly different factor, is found in the San Joaquin valley. Near Visalia, 2 feet above river bottom and 4 feet above the surrounding plains, there is a large area of deep alluvial soil with much decayed vegetable matter. The land is moistened by underflow from the river, and, though the rainfall is but 7 1-2 inches, deciduous fruits are grown without irrigation. In the same county, and only 18 miles distant, there are areas of rich loam mixed with granitic sand 16 to 18 feet deep. In this locality, though the rainfall is 11 1-4 inches, irrigation is practiced freely, as the loss of moisture in summer is very great.

TILLAGE AND IRRIGATION.

Tillage, particularly during the dry season of the year, under some conditions, directly determines the need of irrigation, and is to a certain extent, as the popular phrase goes, a substitute for irrigation.

Under all conditions surface tillage, by promoting conservation of soil moisture, is determinative of the actual duty of water, whether it be from rainfall or irrigation. The effect of frequent surface tillage has been accurately determined by investigation and experiment, both in humid and arid regions.

These experiments fully support the view taught by the experience of about half a century in California, in accordance with which thorough winter and summer tillage has been so widely practiced in the arid section as an essential to successful fruit growing. There are, however, some conditions in which clean cultivation during the season of highest heat may not be the best practice, as will appear later.

The relations of tillage to soil moisture include both reception and conservation. For the reception of moisture, deep work with the plow, and sometimes with the subsoiler also, is almost indispensable.

To retain this moisture and to prevent, as far as possible, its escape into the thirsty air of the arid region by surface evaporation, less depth and more thorough surface pulverization are required. Recent practice has been tending toward deeper summer cultivation, so that 5 to 6 inches of loose, finely divided soil is now obtained where formerly half that depth was considered adequate.

It has also been shown that frequent stirring of this fine surface layer checks evaporation, even when no water is applied to compact the surface or where no weeds grow to draw upon the soil moisture. In a word, the aim of tillage in the arid region, so far as it relates to moisture supply in the soil, consists in opening the soil to rain, or to irrigation, and in subseqeuntly closing it to evaporation.

ENGINES AND HORSES.

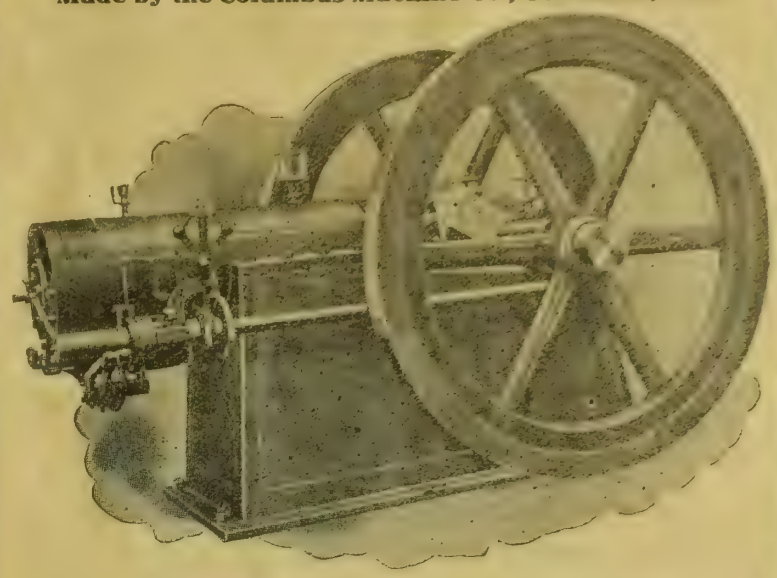
The farm horse must soon recognize the traction engine as a competitor. What will then be the result? Poor and inferior horses will not be worth their feed and keep. Only the well-bred, well-formed horse can stand against this form of competition. The automobile is yet an expensive plaything.

One or two more turns of the wheels of invention and the "auto" will be an economic farm factor. It is time that our farmers should have a weather eye out for these impending changes. The German coach, the standard bred, the draft breeds, will be more important ten years hence than today.

There is a Reason why you should buy

Columbus Engines

Made by the Columbus Machine Co., Columbus, Ohio



Simplicity—Highest Efficiency—Economical
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They have been in the field over fourteen years.

Their output is one of the largest in the United States.

What does this mean? It means that the present standard they are maintaining on Columbus Engines is the result of fourteen years labor of experienced mechanics with one of the best equipped plants in the United States behind them, to produce an engine which is simplicity in itself.

Free from all complicated and trappy devices. It don't take an expert mechanic to see the simplicity and good points on the Columbus Engine over other makes.

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Estimates given on complete pumping plants.

Correspondence Solicited.

Greenleaf Compton Co., Agents

121 So. Los Angeles St., Los Angeles

If you can't come write us and we will send our representative.

Does this stream of water look good to you?

It certainly does to the two men standing beside it. They are the President and Treasurer of the company to whom the plant belongs.

It is raising 40 inches of water from 250 feet below where they are standing. This water goes into a reservoir 18 feet above the pump through an 8-inch pipe-line about one-eighth mile long and you cannot see a pulsation in the discharge if you try. It has been doing this for over a year. There have been no repairs, not even new leathers, and it runs better, if such were possible, today than it did a year ago.

How many pump users can say this?

It shows conclusively that it pays to install good machinery.

We have done this for these people and we can do it for you if you give us a chance. Our catalog tells all about it. Mail us a card asking for it today.

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Rain, sun, wind, heat and cold play havoc with most roofs—but not with Genasco Ready Roofing.

No winter's cold can crack it; no summer sun can dry it out; no drenching rain or melting snow can make it leak; no sparks or brands can fire it. Your barn, house, and all buildings on your farm, with their contents, are safe under a Genasco roof.

Smooth and mineral surfaces—several weights. Easy to apply. The most progressive dealers everywhere sell Genasco Ready Roofing. Book 35 goes into full details. Write for book and samples.

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When writing advertisers, mention Cultivator.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

Market Quotations.

I wish to inquire about your market quotations. I never paid any attention to such things before and do not know what they stand for.

Please tell me when you give eggs per doz. 20 cents, does that mean what the consumer can buy them at or does it mean what the commission merchant will pay producer? Does 15 cents per lb. for hen mean live weight as producer sells her to commission men? Ducks, 15@16 means what? How much would one add to these prices to give an estimate of price consumer would have for eggs and poultry? Shall be greatly obliged for this information.—W. D. G., Lordsburg.

Price for eggs is fixed by Produce Exchange and is the one paid to buyer or commission man by the retail grocers.

The price of poultry is live stock price, that paid to the farmer or producer. Our live stock quotations are on the same basis and are the prices furnished us by Simon Maier and Cudahy Packing Companies as the schedule offered to the producer. Not all prices paid to consumer can be obtained by the Cultivator and in such cases we aim to explain how to get "down to bed rock" as per note above honey prices.

Our market reports constitute the hardest, most difficult and unsatisfactory work on the paper.

Breeding Mares.

Is it detrimental to the future value of a mare to breed her the second and third years?

Our mare will foal in a few days; she will be three years old the 1st of April. If it will not injure her in anyway we would like to breed her again nine days after foaling. She is a fine large animal, weighing 1200 at two years and six months.—W. G. W., El Cajon.

I would not consider it at all wrong to continue to breed the mare as long as she is well fed and not worked, we usually breed them at two, raise two colts and then skip a year while we put the mare to work and get her in good trim. Then if the colts show up well we try to raise two more from her and then sell her, for by that time she usually has a daughter in the breeding string. In this way we are constantly improving the quality of the brood mares on the ranch. We do not like to raise a colt from her the fourth year, while she is being broken to work as there is considerable risk of her slinking and when this occurs the chances are against her ever being a reliable breeder again.—M. E. S.

Of course I like Purina Chick Feed, for I,m a Checkerboard Chick. See my ad, page 376.

Rhubarb Culture.

Last week a subscriber sent in an inquiry as to how to handle rhubarb in the garden. We sent this to Mr. J. B. Wagner, of Pasadena, who is better qualified to answer than anyone we know. He says:

"Plant Rhubarb, summer sort so crown is about one inch under surface. Winter sort, just as deep as it originally grew, or so crown is just at surface, otherwise it will be smothered. A good sandy rich loam is best for general purpose. However, any soil that grows good vegetables is O. K. Plenty of well-rotted cow manure worked thoroughly in soil is decidedly beneficial. Keep ground from getting too dry during summer."

Eucalypts for Hesperia.

Can you tell me if there is any Eucalyptus that will do well here on the Mojave river bottom; elevation 3000 feet, soil sandy, last winter 5 degrees below, and 5 feet of snow.

E. Rudis six years old froze up, and the bark split wide open.

Also would the black locust and Arizona ash be suited in this locality, and at what time should the seeds be sown?—S. C. L., Hesperia.

No Eucalypt will grow with you, black locust and Arizona ash will. Plant now.

Lousy Cows.

Editor Cultivator: I have two cows which are lousy. I have only had them a short time; what is the remedy? Also what is the proper amount of oil cake for a feed for a cow.—C. D., San Bernardino.

Use creolin, 5 per cent. solution. Spray or swab it on to saturate the hair, next week repeat so as to destroy the nits that have hatched. Tobacco stems boiled to a coffee-colored mixture is also good. But do not fail to repeat the week following or the first application is useless.—M. E. S.

Non-Kicking Device.

We have received the following letter from Riverside county:

"Wnen can I get address of party advertising in the Cultivator, 3 or 4 years ago, a device to prevent cows kicking? A party in Riverside bought one and it is a great success and I wish to get one.

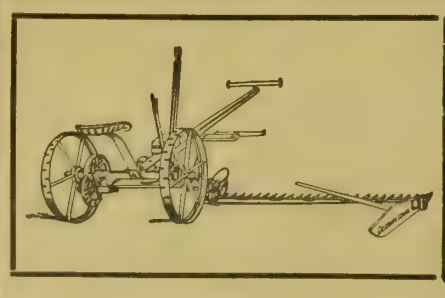
Will party who advertised do it some more? If so, they are welcome to this and other letters of inquiry along same line.

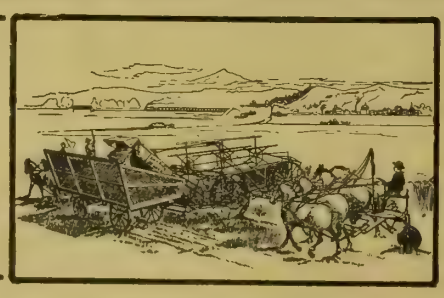
Horse Cough.

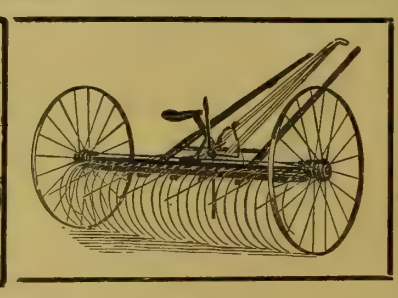
My horse has a dry cough. I feed bran and oat hay. Please let me know cause of cough.—F. Y., Lodi.

Ask this question again giving more particulars. If a chronic cough the only thing to do is to feed the horse well and use a blanket at night and if warm from driving blanket him until cool, then rub off well.—M. E. S.

Minorcas are called the "middle weight egg machine." They are also a good table fowl, weighing six to seven pounds for hens and nine or ten pounds for roosters. They are non-setting. The large comb is the principle objection to them.







Implements for the Ranch

We can supply **everything** that is needed in ranch implements. You can't afford to buy without first getting our prices and inspecting our goods. Note the following—a few of the excellent lines we carry. Is there not something in the list you need? If you can't call, **write** us. **Do it today.**

Deering Mowers	Dain Buck Rakes	Schuttler Wagons
Deering Rakes	Dain Stackers	Burg Wagons
Deering Binders	Dain Hay-loaders	Winona Wagons
Deering Reapers	Southwick Hay presses	Farmers Handy Wagons
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Deere Plows	Dain Hay-presses	Dicks Feed Cutters
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Better have seeds at hand for planting time—saves delay

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Most complete stock in the West, embracing everything new of decided merit in both vegetable and flower seeds. Headquarters for Eucalyptus and other tree seeds. Full line of Fruit Trees and Ornamental Stock. *Write for Our 1907 Catalogue.*

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We carry the most meritorious foods on the market, many being recommended by the U.S. Experiment Stations as containing the highest percentage of protein, which is the principal factor in egg production. *Write for Our New Poultry Catalogue.*

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Strong, Field-Grown Roses
56 Varieties
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By ERNEST BRAUNTON

CUT FLOWERS.

CUT flowers cannot be arranged very satisfactorily among growing plants. The cut flowers are better for vases on the mantel or piano and dining room. In home decorations never undertake elaborate effects; simple arrangement is always the most artistic. There is a wide field for good work in home decoration.

We cannot all be artists, but we can at least cultivate good taste. We can study the value of colors and learn how to combine them in such a way as to produce harmonious and pleasing effects. The highest effect of true art consists in being natural. Home decoration deserves to be popular, it encourages originality, develops artistic taste and makes the farm home attractive.

CHESTNUT.

The chestnut (Castanea dentata) is among the largest of our hardwood trees, and in the region of its best development has been known to reach a height of 120 feet and a diameter of great size. Throughout the greatest part of its range, however, it is much smaller, with an average height of 80 to 100 feet and a diameter of from two to four feet.

EUCALYPTS FOR TIMBER AND FUEL

Continued from First Page

Every Eucalyptus plantation must be carefully guarded from fire. The fallen leaves, twigs and bark shreds, which always cover the ground to considerable depth, are naturally oily, and in the dry air of the Southwest become highly inflammable. If a fire once starts it is almost impossible to put it out before the heat, if not the direct flame, has killed or seriously injured the trees. The bark of the trees is not thick, and affords little protection to the living tissue.

Since it is always advisable to reproduce a Eucalyptus grove by means of stump sprouts, care should be taken that the trees are felled between November and April, and that the stumps are cut low smooth and slanting on top. When the cutting is done at the right time the sprouts are vigorous and have time to harden, while the roots are not exhausted. The stumps should be low, in order that the new shoots may be forced to start close to the ground and establish their own roots as soon as possible, and smooth and slanting, so that rain water may not gather on them and hasten decay. When the shoots reach a diameter of about 2 inches, all but three or four of the straightest, most vigorous, and best placed ones should be cut out from each cluster. This thinning should yield enough firewood to pay for the cost, but whether it does or not it should not be omitted, for it will cause the remaining shoots to grow much faster by giving them more light and room.

Cost and Returns.

Windbreaks are usually made without much reference to their cost, for they are often indispensable. Woodlots, on the other hand, should pay at least as much, either directly or indirectly, as the land they occupy would yield in any other crop.

The cost of establishing a plantation of the blue gum will depend largely upon local wages. The cost of maintaining it when once established depends entirely on the rental value of the ground. The following figures may be accepted as the average cost of establishment for an acre in most localities. All expenses, with compound interest at 5 per cent. are carried to the time when the plantation is 12 years old and yields its first crop:

Preparation of soil	$7.00
700 plants, at $8 per thousand	5.60
Planting	4.00
Cultivating 5 times, first year	2.50
	19.10
Interest on $19.10 for 12 years	15.20
Cultivating 3 times, second year	1.50
Interest on $1.50 for 11 years	1.06
Total cost, excluding land rent, at end of 12 years	36.86

Disregarding the small possible yield from thinnings before the main crop is mature, the wood that can be cut at the end of twelve years will probably amount to 60 cords. This will bring $3 per cord on the stump, or a gross income of $180.

The net income at the end of twelve years is what remains after deducting the gross cost of the plantation exclusive of rent, $36.86, from the gross income, $180, or $143.14, which is equivalent to an annual net income of $9 with interest at 5 per cent. If the rental value of the land is $5, the annual net profit would be $4; if the rental value is $6, the profit is $3, and so on.

After the first crop, the returns will be greater, because planting and cultivation will be saved and the trees will be large enough to cut again in eight years. For the second and succeeding crops, the yield will be 60 cords of wood at $3 per cord, or $180, which, since there is no expense, is the net income from 1 acre for eight years, equivalent to an annual net income of $18.85. Again assuming a land rental of $5, there remains a net profit of $13.85 per acre per year.

Red Gum (Eucalyptus rostrata).

This species does not grow so rapidly as blue gum, but in most other respects is superior to it. Comparatively few plantations have so far been made in the United States, but those that are established give promise of quite as good returns as any of blue gum. The tree is more hardy than the blue gum, and will withstand more alkali and more drought than the latter. When young, it is nearly as susceptible to frost as the blue gum, but mature trees may survive as low temperature as 15 degrees F.

The wood is heavy and hard like that of blue gum, but is red in color and much more durable. This last quality apparently makes it available for posts, poles and piles, and goes far to recommend it in preference to blue gum. Plantations may be made in the same way as those of the commoner species, and at about the same cost. Planters are recommended to give this tree a trial, especially where there is a demand for other material than firewood.

Sugar Gum (Eucalyptus corynocalyx).

The chief value of this species is that it endures more drought than either of the others described. In most of its qualities it is simliar to red gum, and under good conditions grows nearly as rapidly.

The wood is heavy, not so hard as blue gum, easy to split, makes a very hot fire, and is moderately durable. It is also said to season better and to work more easily than the wood of other Eucalypts.

The tree may be propagated in the same way as blue gum, and is recommended for planting because of its good qualities, among which is its ability to grow in localities where the heat and drought are too severe for other species.

Yes, this is how I hurry to get Purina Chick Food. I'm a Checkerboard Chick. See my ad on page 376.

Leonard Coates Nursery Co., Inc.

ROSES Splendid assortment, field grown, $2.00 per dozen.
CARNATIONS 5-inch Pots, field grown, $2 per doz.
A New Walnut. Eucalyptus, Acacias, California Privet, Etc.
No Fruit Trees This Season.
CATALOGUE of strictly Pedigreed Fruit Trees, Etc., will be issued during 1907. Orders may be booked at any time.

Morgan Hill, Santa Clara County, Cal.

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POTS · POTS POTS
Formerly used by Chase Rose company, and are in good condition; 2-inch size only. Price, $2.50 per 1000, f.o.b. cars. No extra charge for packing.
Sample boxes containg 620 pots for $1.50 per box. Try a box
Write for price of 3x6 sash.
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Commercial Smyrna Fig a Specialty

Plant Roses Now

EXTRA SPECIAL SALE

If you have not yet taken advantage of our special offer, write at once for the supply is limited and we shall be forced to withdraw our offer very shortly.

We wish to reduce our nursery stock, and offer 10 of our Taylor's California Roses for $2.00 with 20 packages of flower and vegetable seeds as a free gift.

The roses themselves are a bargain for the money, being the most beautiful varieties grown in California. 2 years old—big flourishing plants. Start a rose garden and keep your home beautified with lovely blossoms.

The seeds are enough to fill your garden with an abundance of flowers and vegetables. Send $2.00. Write name and address plainly.

F. Gilman Taylor Seed Co.
Box 9 Glendale, Cal.

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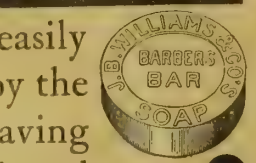
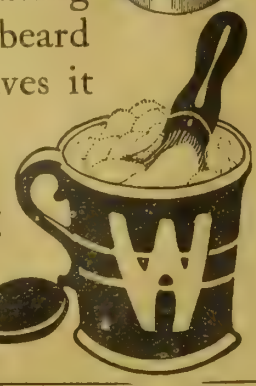
THE strongest beard is easily and quickly softened by the rich, soft lather of Williams' Shaving Soap. Besides softening the beard it soothes the face and leaves it smooth and comfortable.





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Send 2c. stamp for a TRIAL CAKE of Williams' Shaving Soap, or 4c. for a Williams' Shaving Stick, trial size, enough for 50 shaves. Address

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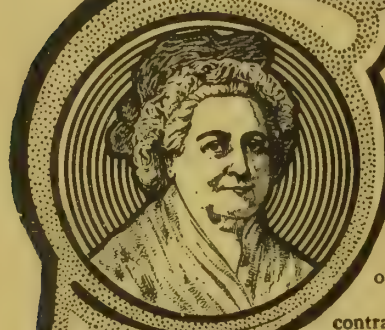

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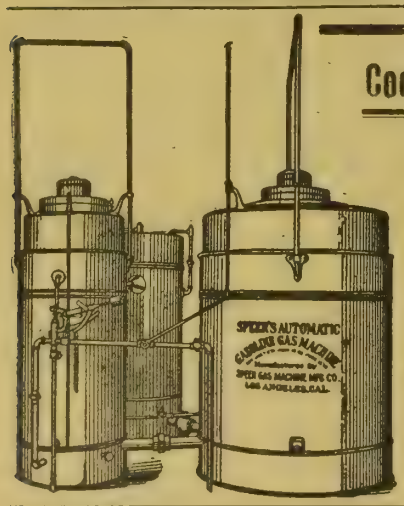

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Household Department

WE HAVE BEEN FRIENDS.

We have been friends together
  In sunshine and in shade
Since first beneath the chestnut tree
  In infancy we played,
But coldness dwells within my heart,
  A cloud is on thy brow—
We have been friends together;
  Shall a light word part us now?
We have been gay together;
  We have laughed at little jests,
For the fount of hope was gushing
  Warm and joyous in our breast,
But laughter now hath fled thy lip,
  And sullen glooms thy brow—
We have been gay togethher.
  Shall a light word part us now?
We have been sad together;
  We have wept with bitter tears
O'er the grass grown graves where slumbered
  The hopes of early years.
The voices which were silent there
  Would bid thee clear thy brow.
We have been sad together;
  Shall a light word part us now?
—Caroline E Norton.

FIVE STORIES UP.

"THE most thrilling sight I ever saw," said the foreman of the composing room, "was when I had a case on a Buffalo newspaper.

"The paper had been sent to press one morning, and most of the compositors, except the emergency men, had hurried home, so as to get to sleep while it was still dark. Several of us had remained behind to paste up our strings. What? 'Strings?' Why, strings of 'dupes.' Proofs of the stuff we'd set for the week, you know, pasted end to end, so that it could be measured for our pay. Well, one of the fellows who had gone out came hurrying back, and yelled, 'The Carlton's on fire!'

"The Carlton was then one of the best hotels in Buffalo. We all jumped and rushed up Washington street, but by the time we had run the few blocks the big hotel was belching smoke and flame on every side. The firemen were taking guests and employes out of windows and down fire-escapes, and there were many brave rescues; but in spite of everything some people lost their lives.

"We made our way round to the Main street side. We saw some horrible sights that night. Window after window crashed outward and fell in a clattering of glass upon the pavement, to be followed by blasts of flame and smoke.

"'It's all over for those who aren't out,' remarked my companion. Suddenly he gave almost a sob, and pointed up to a window five stories above us. A man only partly dressed was crawling out of the smoked-filled room up on the narrow stone window sill.

"There did not seem to be the slighest chance for the man. With the greatest deliberation he stepped out on the narrow stone ledge, and carefully closed the window behind him.

"This, we knew, could keep the flames back for only a few moments, but in those moments he took a chance to prolong his life which struck the spectators almost breathless. The window ledges on that floor were continuous along the side of the building, projecting only a trifle over five inches from the brickwork. Some one had recognized the man now. It was the assistant manager of the Carlton Hotel. He had been caught by the fire on the fifth floor, while making desperate efforts to warn everybody of the danger, Coolly and carefully he pressed his back close against the wall, and with nothing to cling to on the smooth brickwork, and with room on the narrow ledge for scarcely more than his heels, he edged his way, sidewise inch by inch away from the window. Hardly had he cleared the opening before the flames broke through the window in a great burst of sparks and smoke. The room into which the next window led had already become a seething furnace.

"How the man stood on that narrow ledge for the next few minutes will be a mystery now, even to himself. It was a marvel of nerve and clear-headedness, but his desperate efforts to save himself seemed futile. No ladder could reach him, and with every window on the Main street side vomiting destruction, the scaling ladders were useless.

"Suddenly the great Hayes truck swung round the corner from its work of rescue on the Eagle street side of the building, paused near the center of the street, and the massive ladder began to build its way up until it had attained its full height, when it was found to reach but a trifle above the third story. The last beckoning of hope seemed to have gone.

"The great ladder was being swayed backward and forward in the air, and in toward the building against the masses of wires, while the unfortunate man stood like a bit of carved relief work, flattened, motionless, against the wall of brick, the fierce glare of the flames beating upon him like a calcium light. It seemed that in a moment now he must fall, and be crushed to death on the pavement.

"But suddenly, as the top of the ladder swayed back and forth in the air, in to within ten or twelve feet of the building—back—and in again, an almost imperceptible movement of preparation could be discerned in the body of the intrepid man. As a last desperate chance, he was going to attempt the leap to the top of the swaying ladder almost two stories below him, and far out from the building.

"At almost the same instant the crowd and the firemen seemed to divine his intention. A fireman dashed up the ladder to the very top, to be ready with a strong arm; and, the mechanical swaying of the ladder in toward the building was made stronger and more regular. There was not a moment to lose. The flame and smoke were enveloping the entire front of the building, and as it cleared away momentarily the manager could be seen gathering himself for his mighty effort.

"Never in the greatest hippodromes of the world has the daring feat of an athelete had a more dramatic setting or spectators more thrilled and breathless. Three times the ladder swung slowly inward, and three times the man seemed to gather himself for the spring, and then hesitate. Inside the building a floor fell with a crash, and as the ladder swayed back for the fourth time, and a great blast of sparks and flames shot out from the tower at the tower at the corner, as with one voice the firemen and the people shouted, 'Now!'

"The ladder swung slowly inward and at the same instant the manager leaped far out through the air.

"Down he plunged; the fireman on the ladder braced himself for the shock, and then a dense cloud of smoke swept across the street, enfolding everything; but in an instant it cleared away, and two men clung to the top of the ladder, unharmed, while high above the horrid roar of the flames and the din of the engines came cheer on cheer from the vast throng in the streets.

"And that," concluded the foreman, as he hung his apron on the "dead copy" hook and took his coat from the peg in the wall back of the job press, "was the most thrilling sight I ever saw or ever expect to see."—Charles Newton Hood in Youth's Companion.

FARMER'S FUEL.

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Southern Pacific

PA'S HOUSECLEANIN'

When the April's sun's a-shinin' hot an' things is nice an' fresh,
When the willer's droppin' tossels an' the blackbird's in the bresh,
An' pa comes in fer noonin' an' the floors is wet as souse,
Then it's "Laws-a-massy on us! Your ma's a-cleanin house!"

Then me an' Jim is sure to find rag carpets in the sun
When we'd planned to go a-fishin' fer the suckers in the run;
But while pa takes his noonin' an' the hosses eats their snacks,
Us boys can beat them carpets while we're restin' up our backs.

An' then next day pa's certain sure to have to go to town;
But he always leaves us orders, "Help to put them carpets down."
An' at night, when he gets home again, you'd think, to hear him groan
About the hardship of it, that he'd done the job alone.

Poor ma! She has it awful hard, she'll work until she drops.
An' pound her thumb nails half way off, an' wet her feet with slops;
She'll get so hoarse that she can't speak, an' sore at every bone;
But pa, he says if it was him he'd let the house alone.

An' when that night the kids is sick an' has to have a drink,
An' ma she can't get up because her back's in such a kink,
If pa should bang the furniture whilst gropin' fer the cup,
You can feel him gettin' mad enough to fairly eat her up.

So me an' Jim was sayin', if the time should ever come
When pa and ma should change their work an' pa should stay to hum,
I would't like to be a boy, but jest a little mouse
To hear what things pa would say if he was cleanin' house.—Woman's Home Companion.

TUFTED BED SPREAD.

Get three-quarters sheeting (unbleached is best.) Take a breakfast plate, and laying face downward exactly in the middle of the sheet, which is spread out, mark around with pencil or grease the edge of the plate, which will make a mark khen pressed down on the cloth. After marking off the first circle you can arrange the others in rings around that one, or let the circles lap over each other. You can make your own designs if you prefer. If you use unbleached, first work it by outlining the design with a long baste stick on the right side and short on the wrong with white cotton knitting thread doubled in the needle, then bleach by wetting and rubbing thoroughly with soap and leave out in the dew for several nights. After this boil out, rinse thoroughly and after it is dried and ironed cut the thread on the right side, which causes it to tuft. You then have a neat spread as easily laundered as a sheet.

A WOMAN.

"Can throw out of the window with a teaspoon more than a man can bring in on a shovel" is a most homely old saying with much truth.

A few out of many dozens of ways of filling the teaspoon of waste are:

Buying articles simply because they are cheap and expected to "come in handy" sometime.

Using sheets for ironing tables, napkins for dish towels, and towels for dishcloths.

Using silver forks and spoons in the kitchen.

Opening tinned meats, preserves, etc., forgetting all about them, and leaving them to spoil.

Letting pieces of bread dry and mold, and then throwing them away.

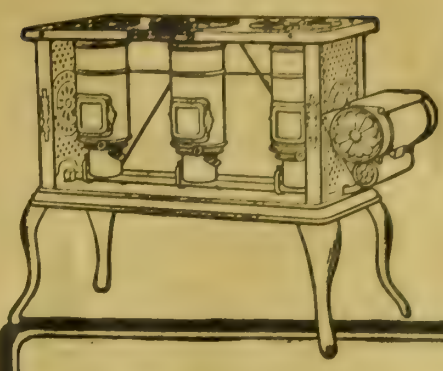
Placing brushes with the bristle side up.

Wearing the same clothing each week as it comes from the laundry.

Using the same table and bed linen each week as they come from the laundry.

We're two lusty little Checker-board Chicks.

See our ad on page 376



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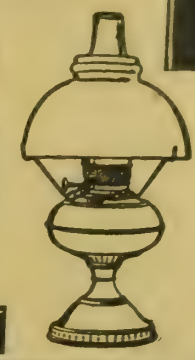

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FOR SALE—INDIAN RUNNER DUCK eggs from choice stock, $1.00 per setting of 13; incubator lots at short notice at $5.00 per 100. F. J. QUANT, Madera, California

BUFF ORPINGTON DUCKS—248 EGGS IN 145 days from our two imported ducks. Eggs $3 per doz. Nothing better to raise. GOODACRE BROS., Compton, Cal.

PEKIN DUCKS—STOCK DUCKS $1.50 each; young at $1 each; 2 extra drakes $3 each; all our Cup Winning Strain. GOODACRE BROS., Compton, Cal.

EGGS FOR HATCHING.

EGGS FOR HATCHING—S. C. RHODE ISland Reds and heavyweight Black Minorcas, $1.50 per 13. MRS. L. M. RUCKER, R. F. D. 2, Chino, Butte Co., Cal.

McKINLEY POULTRY FARM—BREEDERS of buff and white Wyandottes. Member American Buff Wyandotte Club. Golden Seabright and Pyle Game Bantams. Eggs $3.00 and $2.00 per 13. Take San Pedro Interurban car to McKinley, first house north. BOX 11, R. F. D., Gardena, Cal.

BLUE RIDGE POULTRY YARDS, W. H. Brown, Prop., 128 Ave. 32, Los Angeles, Cal. Breeder of Blue Andalusians. Won more first prizes than all our competitors combined. All specials went to our strain. Eggs $1.50 and $2.00.

MY WINNINGS AT THE LATE BREEDERS' Show on Rose Comb Black Minorcas were three prizes from four entries. Eggs two dollars per fifteen. Correspondence solicited. M. E. BROWN, Box one hundred, R. R. No. one, Los Angeles, Cal.

HAVE PURCHASED FROM W. A. STEWart the pen of Black Orpingtons that won 1st at Dairy Show, London last year, 1st at Breeders' Show, Los Angeles 1907. Will sell a few settings. ROSS & TATE, Altadena, Cal.

S. C. WHITE LEGHORN EGGS FROM THE bred-to-lay Blanchard strain. Large birds. $1.00 for 15; $6.00 per 100; Free city delivery. C. M. GIBBS, R. F. D. No. 4, Los Angeles, Cal. Phone W. 591.

FOR SALE—PURE BRED STOCK, S. C. White Leghorn Eggs. Large eggs, great layers, eggs for hatching only. $1.50 per 15; $6.00 per hundred. RICHARD POWERS, Anaheim, Cal.

35c PER DOZEN; S. C. WHITE LEGHORN eggs for hatching, fine stock, large eggs, 95 per cent, fertile. Carefully packed. MATT MARTIN, R.F.D. G street, Ontario, Cal.

BUFF ORPINGTONS—EGGS FOR HATCHing. $2 per 15; L. C. Black Minorcas, $1.50 per 14. $8 per 100. Also S. C. Whits Leghorns, $1.00 per 15, $4 per 100. SCOTIA POULTRY FARM, Fowler, Cal.

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RICHEST PRAIRIE LAND IN NORTH America. Yielding greatest average crops known of wheat, oats, barley, sugar beets. $15 to $25 per acre. Easy terms. Water sure. Free fare on cetain conditions. Address W. R. GILSON, 121 E. 4th street, Los Angeles, Cal.

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HARRISON'S R. I. REDS AND WHITE Rocks. The best out West; 12 awards at Poultry Breeders' Show, including 1st and 3rd Red cockerels, 1st and 2nd Red pullets in a class of 36 pullets; White Rocks 1st pen, 1st and 3rd pullets and 3rd cock. New circular. Eggs $2.00 for 15, $5.00 for 50, $8.00 for 100. LAKE AVENUE POULTRY YARDS, 757 N. Lake Ave., Pasadena, Cal.

BLUE ANDALUSIANS—I did not exhibit this year but have better stock than ever. Eggs for hatching, $2.50 per 14. Incubator lots $7.50 and $10.00 per 100. No fear of inbreeding as we have three strains. MRS. T. R GRIFFITH, 3111 Walton Ave., Los Angeles

FOR SALE—BARRED ROCKS, WINNERS OF 11 prizes and Silver Cup for Best Barred Rock Male at Breeders Show, 1907. Some choice cockerels for sale. Eggs. Write your wants. Frederick Espe, 4425 So. Main St., Los Angeles, Cal.

SINGLE-COMB WHITE LEGHORNS, FINE white, large, birds; good layers. Hatching and shipping chicks. Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER Ontario, Cal.

PARTRIDGE WYANDOTTES—C. ANDREWS 332 West Third street, yards at Hollywood. Cal., eleven prizes and silver cup at Poultry Breeders' Show 1907.

FOR SALE—INDIAN RUNNER DUCK EGGS, fine stock, 50c per dozen; $3.50 per 100, 80 per cent fertile. JOHN W. LYON, E. Palm Ave., Gardena, Cal.

BUFF ORPINGTONS—EGGS $2 PER 13, good even flock. Trios $7 up; Pens $10 to $15. Don't delay. GOODACRE BROS., Compton, Cal.

HOMERS FOR SQUAB BREEDING, GUARanteed mated birds. Prolific breeders, $1.50 a pair. EMMA V. WEATHERS, Nipomo, Cal.

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BLACK ORPINGTONS—TWO TRIOS $15 each. Eggs $3 per 13. GOODACRE BROS., Compton, Cal.

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SPECIAL SALE—WILL SELL CHEAP 1ST, 2nd and 3rd prize Barred Rock cockerels at late breeders' show, these are grand birds and will give special price if taken at once. Also eggs. Write your wants. FRED ESPE, 4425 South Main street, Los Angeles, Cal.

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MUSCAT GRAPE VINES ESPECIALLY selected for arbor planting or climbing on trellis. 6 strong plants, $1.00. SOUTHARD NURSERIES, Redlands, Cal.

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Los Angeles Office
313 North Los Angeles Street

The Produce Markets

Los Angeles Markets

LOS ANGELES, APRIL 3, 1907

Trading in the produce market was very quiet this morning. The weather was against activity and the reaction from the lively business during the week preceding Easter is still felt in the market.

BUTTER

There was no change in butter prices. Receipts yesterday were not so heavy as on the day previous, but there is just about a sufficient amount on hand hand to fill orders.

Valley Creamery 67½
Coast, fy, ...60
Cooking 20

Cheese

Cal. Young American, per lb. 21
California Anchor 20
Cal 3-lb. hand 21
Northern 18
Domestic Swiss 22
Imported Swiss 30

Eggs and Poultry

Egg receipts yesterday were nearly as heavy as those of the day previous and the market was decidedly easier, but owing to the fact that dealers can store all of the surplus at present quotations prices did not go lower.

Eggs, local, per doz 20
Northern Candled 19
Fresh Eastern 18

The following are average prices which dealers pay to producers for live weight:

Hens, per lb. 16
Young Roosters, per lb. 21
Fryers 22
Broilers, per lb. 24
Old Roosters 8
Turkeys 17
Geese .. ..15@16
Ducks .. ..15@16

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lbs. .....7.75@8.00
Prime Steers. 5.50
Heifers 4½
Calves, per lb 5
Sheep, ewes, per head 5.50
Lambs, per head 4.00
Wethers 5.50

Potatoes

The potato market is still very unsettled and a little inclined to weakness. A few brokers are endeavoring to prevent a break by holding their prices up, but bidding is weak and even some dealers are more inclined to sell than to buy.

Salinas 2.50
Sweets, Yellow, per sack 5.00
Colorado 2.05
Minnesota 2.00

Vegetables

Vegetables were in abundant supply this morning, while demand was lacking .

Asparagus, lb .....13@17
Beets, per doz ....40@60
Bell Peppers, Green, lb 5
Cabbage, sack 1.50
Chili Peppers, Green 30
Chili, Dried, per lb... .....13½
Cucumbers, per doz .....1.50@1.75
Cauliflower, per crate 3.00
Carrots, per doz. ..... 40@50
Celery, per doz .....30@50
Egg Plant, per lb 15
Garlic per lb 6
Green Onions, doz. bunches .....25@30
Lettuce, per crate 1.00
New potatoes, per lb. ..... 5@6
Lima Beans, per lb .....7@8

Bermuda onions were offered again, to arrive next week, at the extreme high price of $3.25 per crate. This is the first car that is to be shipped here this season from the Imperial Valley, and it is said there will be no onions to follow from this source for several weeks, consequently the shippers feel safe in holding the price so high. However, it is reported by other Shippers that Bermudas will arrive here from another source next week. This will undoubtedly have an easy effect on the market.

Onions, Aust. Brown, sk .....135@1.50
Onions Y. Danvers .....1.35@1.50
Parsnips, per doz .....35@50
Rhubard, per lb 5
Radishes, per doz .....15@20
String Beans, per lb .....8@12
Sugar peas, per lb .....3@5
Turnips. doz. bunches ..... 40@50
Tomatoes, Mexican, crate, ...75@1.25
Wax Beans, per lb .....16@18

Citrus Fruits

Lemons 2.00
Valencias .....1.50@2.00
Navels ....1.25@1.50
Grapefruit Seedless .....2.00@2.50
Grapefruit seedlinggs .....1.25@1.50

Fresh Fruits

Strawberries were abundant in the market this morning and prices went down several cents per box on account of the over-supply. It is estimated over 2000 crates of berries came in last night, and had it been pleasant weather today they would have been fairly well cleaned up, but the rain kept buyers out of the market.

Apples, Bellefluer, per box 1.50
Apples, Ben Davis 1.50
Strawberries ..... 8@10

Dried Fruits

Evap. Apples, fancy, per lb 9
Apricots 18
Peaches. 12
Pears .. ..12@13
Prunes, fy, ...5@8

Beans, Dried

Limas, No. 1, per cwt 4.75
Pink No. 1 .....2.65@2.75
Lady Washington .....2.75@3.00
Small White ....3.25@3.40
Black Eyes .....5.50@6.00
Garvanzas .. ..5.50@6.00
Lentils .....12@15

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb. cans, ...8
Light Amber .. ..6½@7
Comb, water white, 1-lb. fms 16
Light Amber 11

Nuts

Almonds, new, per lb.....19@20
Peanuts, Virginia 7
Peanuts, California 6½
Walnuts, No. 1, S. S. .....14@15

Hay

Barley, No. 1 ..... 14.50 @16.00
Barley, No 2 .....11.00@12.00
Alfalfa, Local, per ton .....15.00@16.00
Plain Oat Hay, No. 1 .....17.00@19.00
Plain Oat Hay No. 2. .....9.00@15.00
Wheat No. 1 .....14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, new, per cwt... ..... 1.50
Barley (to producer).....1.00@1.05
Rolled Barley 1.35
Corn, per cwt.....1.40
Cracked Corn 1.45
Feed Corn Meal 1.50
Shorts 1.35
Bran 1.20
Oil Cake Meal 2.50
Cocoanut Meal 1.40

San Francisco Markets

SAN FRANCISCO, April 2, 1907.

Butter.

Butter had some recovery, extras advancing ½c per lb. and first and seconds 1c. The market closed firm.

California, ex. per lb 28
California, firsts 27½
California seconds 27
Packing Stock 23

Cheese

Fancy new cheese was ½c per lb. lower for flats. There was no change in cheese.

New California, fancy 16
Cal. Young American, fancy 16½

Eggs and Poultry

Fresh Ranch Eggs 20½
Eggs, first, per doz. 19½
Hens, per doz., small .....5.00@5.50
Hens, large ....600@7.50
Young Roosters, large .....7.00@9.00
Young Roosters, small .....4.50@5.50
Old Roosters.....4.00@4.50
Fryers, per doz .....6.50@7.50
Broilers, per doz .....4.00@6.50
Ducks, young .....6.00@8.00
Geese; per pair .....2.00@3.00
Turkeys, per lb .....16@19

Live Stock

Steers. No. 1 .....9@9½
No. 1 Cows and Heifers .....6½@7
Hogs, 80 to 130 lbs .....8@8½
Hogs, 250 to 350 lbs. 8
Calves, per lb .....5@5½
Lambs, yearlings .....6½@8

Potatoes

Salinas Burbanks ctl. .....1.65@2.10
Rivers .....1.85@2.00
Sweet Potatoes, ctl .....2.75@3.00

Vegetables

Asparagus .....6@12
Cucumbers, per doz. .....1.00@1.25
Chili Peppers, Green lb ..... 15@25
Egg plant per box .....3.00@3.50
Green Peas, per lb. .....10@12
Squash, crates. .....65@90
Onions, Red, per sack .....75@1.00
Onions, Yellow .....75@1.00
Peppers, Green Bell 25
Rhubarb, per box .....50@1.00
Squash, crate .....65@85
String beans .....15@17
Tomatoes, Mexican .....1.25@1.50

Citrus Fruits

Seven carloads of oranges arrived, also one of tangerines and grapefruit. Navel oranges of desirable sizes were meeting with a fairly good demand. Strictly fancy were in small supply and firm. The fancy lemons were

plentiful but there were large offerings of common and poor.

Lemons	75@2.00
Navels	1.25@2.75
Seedlings	1.50
Grapefruit, seedlings	1.00@1.50
Grapefruit, seedless	2.00@3.00
Limes	3.00

Fresh Fruits

Apples were slow sale. Bananas continued very plentiful. Fifty crates of strawberries arrived from Los Angeles, and in much better condition than those previously received. They ranged in price from $3 to $4.50 per crate.

Apples, per box	1.00@2.00

Dried Fruits

Apples (evap.)	6@8½
Apricots, per lb	16@20
Figs, white	4@5
Prunes	3@4½
Peaches	10@12½
Raisins, seeded (1906)	3½@10
Thompson, unbleached	7½
Thompson, bleached	9@11

Beans and Seeds

Limas, No. 1	4.15@4.25
Pink	2.40@2.60
Large White	2.40@2.55
Small White	2.95@3.05
Black Eyes	5.00
Red Kidneys	3.75
Bayo	2.90@3.00

Hops

Desirable grades of California, 1906 crop, future delivery, 10@12 cents per lb, with occasional sales at 12½ cents.

Nuts

Almonds new	14@18
Peanuts, Viginia	6½
Peanuts, California	5½@6
W lnuts	15@16

Did you say Checkerboard? That's me. See my ad, page 376.

SUITS AND BOOTS

If you are interested in Outing Suits, Headgear, Footwear, Shirts, Leggins or Gloves, send for our new Catalogue. It is printed on heavy book paper, contains numerous colored plates and many fine cuts of clothing and footwear actually in use; and is the handsomest Catalogue of its kind ever issued.. Sent without cost to people who mean business.

Canvas Goods

Lemon Curing Tents.
Fumigating Tents.
Camping Tents.
Irrigation Hose.
Wagon Sheets.
Stack Covers.
Picking Bags.
Feed Bags.
Guns and Ammunition.
Fishing Tackle.
Kodaks.

Address Dept. 5

THE WM. H. HOEGEE CO.
INCORPORATED
138-140-142 South Main St., Los Angeles
Long Distance Exchanges 87

Honey

Clear White Comb	16½
Amber	14@15
Extracted	5½@7

Hay

Alfala, local	8.00@12.00
Oat	15.00@18.00
Wheat. No 1	18.00@20.00
Wheat, No. 2	13.00@16.00

Grain

Wheat No. 1	1.32
Barley No. 1	1.23
Corn, small yellow	1.50@1.55
Corn, yellow	1.27@1.30
Oats, White	1.42@1.60
Oats, Red	1.30@1.60
Ground Barley, per ton	24.50@25.50
Bran per ton	21.50@22.50
Straw, per bale	45@75
Feed Corn Meal, per ton	31.00
Cracked Corn per ton	32.00
Oil Cake Meal, per ton	38.00
Cocoanut Cake, per ton	27.00
Calalfa Meal, per ton	21.00
Mealfalfa, per ton	21.00

Citrus Market

NEW YORK MARKET.

NEW YORK, April 1.—The market continues very strong on good, sound stock and easier and lower on overripe, decayed fruit. Snow last night; weather raw and cool today. Thirty-six carloads of oranges and one of lemons sold today.

NAVELS—	AV.
Criterion o r Penn Fruit Co	$2.10
Orchard o r National O Co	3.50
Standard st National O Co	3.00
Rose Thom. Im Red O G A	2.95
Clover Thom. Im. Red O G A	2.50
Slover Mtn o r Colton D	2.30
Old Mission fy C C Chapman	2.80
Old Mission ch C C Chapman	2.60
Golden Eagle st C C Chapman	2.45
Lion Head ex fy I L Lyons & S	2.35
Tiger Head Thom. Im. I L Lyons	2.65
Flower fy Upland D	2.50
Flower ch Upland D	2.35
Flower o r Upland D	2.60
W Highland fy Highland D	2.40
Carnation ex ch M & G	2.30
Tropical Queen st M & G	2.50
Sunshine Grove J F Bowen	2.75
Sunrise Grove J F Bowen	2.65
B Keystone fy King Ft Co	2.85
R Keystone ch King Ft Co	2.80
Native Son st King Ft Co	2.55
Salt Lake st King Ft Co	2.25
Sunny Slope fy Randolph Ft Co	2.30
Nero ch Randolph Ft Co	2.25
La France ch Kuns Ft Co	2.55
Cyril ch Kuns Ft Co	2.55
Signet ex fy O G C A	3.10
Colonel ex ch O G C A	2.85
Highland ex fy Highland F G A	2.95
Cactus ex ch Highland F G A	2.55
La Belle st Mutual O D	2.30
Colonel ex ch Orange G C A	2.70
Sunshine	2.40
Trade Mark	2.50
Ocean fy F H Speich & Co	2.15
Fountain ch F H Speich & Co	2.00

NEW YORK, April 2.—The market is very strong and higher on all grades, sizes and conditions. Weather cold. Twenty-two carloads of oranges and one of lemons sold.

NAVELS—	AV.
Old Mission fy C C Chapman	$2.75
Old Mision ch C C Chapman	2.60
Golden Eagle st C C Chapman	2.50
Alpha ex fy Riverside Ft Co	3.60
Elk ex ch Riverside Ft Co	3.40
La France ch Kuns Ft Co	2.65
Cyril ch Kuns Ft Co	2.50
Independent o r Highland D	3.50
Vista Bonita fy Hemet D	2.90
Vista Bonita ch Hemet D	2.75
Sunshine	3.40
Signal ex fy Stewart Ft Co	3.75
Warrior ex ch Stewart Ft Co	3.25
Criterion o r Penn Ft Co	3.05
Rose ex fy R O G A	2.95
Clover ex ch R O G A	2.60
Success o r F W Speich & Co	2.30
Florencia fy J M Riley	2.25
La Mesa ex fy Riverside Ft Ex	3.40
Golden Rule ex ch Riverside Ft Ex	3.35
Iris ex fy D M Ft Ex	3.10
Violet ex ch D M Ft Ex	2.55
Golden Rule ex ch Riverside Ft Ex	3.50
Alhambra ex ch S T Ft Ex	2.85
Don Quixote ch, S T Ft Ex	3.00
Mt Whitney T C Ft Ex	3.40
Valley st S T Ft Ex	2.80
Warrior, ex ch Stewart Ft Co	2.35
Rescue ch Stewart Ft Co	2.30
Quail ex ch O K Ft Ex	2.25
Parrot ex ch S A Ft Ex	2.40
SEEDLINGS—	AV.
Arcadia ch R H Lloyd Arcadia	2.40
Burro R H Lloyd Arcadia	2.20
BLOOD—	AV.
Golden Rule ex ch Riv. Ft Ex	3.40
Golden Orange st Riverside Ft Ex	3.70
Palm Tree ex ch A H Ft Ex	3.15
Golden Rulé ex ch (halves) Riv F E	1.90
Golden Orange halves; Riv Ft Ex	1.70
LEMONS.—	AV.
Rossmoyne fy E M Ross	3.90
Rossmoyne ch E M Ross	3.70

CALIFORNIA CITRUS SHIPMENTS.

LOS ANGELES, April 2.—Monday, April 1: Orange, 89 carloads; lemons, 3 carloads. Total to date this season, 12,336 carloads, of which 1288 carloads are lemons. Total to same date last season, 14,194 carloads, of which 1496 carloads were lemons.

DON'T FEED the little chicks anything for the first twenty-four hours. Then feed them dry

West Coast Chick Feed

Bright, pure, clean, made of the finest grains, seed, meat, etc., in just the right proportion to make a full, rightly-balanced ration. They like it, too, and eat it all up clean, for it contains no waste whatever. It keeps them healthy and it will make them feather faster, grow faster and larger than will any other feed. For sale by many dealers. If yours does not keep it, try another, or send to us and we will see that you are supplied.

West Coast Stock Food Company

818 San Fernando Street, Los Angeles, California

Black Minorcas Exclusively

Winnings at the great Los Angeles Show, January 1 to 5, 1907:

Cocks—1st and 3rd. *Cockerels*—1st, 2nd and 3rd
Hens—1st, 2nd, 3rd, 4th and 5th.
Pullets—1st, 2nd, 3rd, 4th and 5th. *Pens*—1st and 2nd.
Cup for Best Minorca Male, also Cup for Best Display.

Plenty of Fertile Eggs For Sale.
Send for our new illustrated catalogue.

Perham & Wheeler
R. F. D. No. 123 Lordsburg, Cal.

33⅓%

Is about the extra cost to the buyers of many of the *cheap*(?) chick foods. Why? Waste—that's why. You buy a 100-lb. sack of so-called chick food, but if your chicks only eat 66⅔ lbs. and the rest is waste, have you not added 33⅓% to the price you paid?

The waste in many cases is lack of knowledge by the makers of what to use and the proportions to use of the various grains. In A. C. W. Chick Food you will find *no waste*. Your chicks will eat all A. C. W. and *digest* it. A. C. W. is put up in sealed sacks. Accept no substitute. At all dealers or direct from us.

EGG FOOD A C W IT FILLS THE BILL

The Agricultural Chemical Works
901-907 Macy Street - - Los Angeles, Cal.

McCullough Poultry Farm

OFFERS THE BEST IN

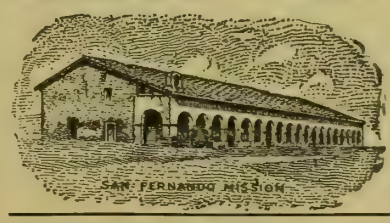
Barred Rocks

OUR BIRDS WON as follows: Second and 5th cock, 4th cockerel, 2d, 3d and 5th hen, 1st, 4th and 5th pullet, 1st and 2d pen, and several specials. Our birds are line-bred, and are excellent breeders as well as show birds. We have sixteen pens mated up from which you can select eggs. Eggs from regular matings $2 and $3 for 13; from special matings $7 for 13.

CORRESPONDENCE INVITED

H. T. McCullough, Mgr., Box A171, West White Oak Ave., Monrovia, Cal.

Mission View Poultry Ranch



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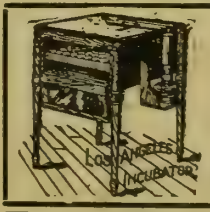
That Are Trap-Nested

Prize Winning, Large Egg Laying Strain. Won Nineteen Prizes in 1906!

Mammoth Bronze Turkeys Lakenvelders
Silver Laced Wyandottes

Mrs. C. D. Hubbard Box 232 San Fernando, Cal.



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1907 Los Angeles

"Model" Made by Chas. A. Cyphers — Best Hot Water Incubator — "Peerless" Made by Henry Albers Co.

Call and See Them or Send for Free Catalogue

315 S. Main **Henry Albers Co.** Los Angeles

Bemis Plymouth Rocks

Barred and White

Prizes Won at Alameda County Poultry Association Show, Oakland—22 Regular Prizes and 7 Silver Cups. Can furnish best birds and eggs at reasonable prices. No incubators lots furnished.

Mrs. Florence E. Bemis, 1757 19th Ave., Oakland, Cal.

Beef, Blood and Bone Will Make Your Hens Lay

This is not a medicine but a high grade nitrogenous food. Write for free booklet, "How to make Hens Lay." Our Poultry Foods are sold by all local dealers and manufactured solely by

The Pacific Guano and Fertilizer Co.

Also Pioneer Manufacturers of *High Grade Fertilizers.* Write for our free booklet, "Farmer's Friend." Valuable to all farmers and ranchers. Indiana and Yolo Sts., San Francisco, Cal.

The "Western" will save from 10 to 40 per cent. in fuel, as compared with other standard fluid-fuel engines.

At the same time the weight is reduced, strains lessened, and the life and serviceability of the engine increased.

WESTERN GAS ENGINE COMPANY
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3rd and Washington St. OAKLAND, CAL.
927 L Street FRESNO, CAL.

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Milking Done Perfectly by the Burrell-Lawrence-Kennedy Machine

All the people using these machines are **thoroughly satisfied.**

This machine has solved the milking problem. Write us for full particulars.

We also handle everything for Creamery Dairy and Cheese Factory. Write for Our New Price List

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Los Angeles
Sacramento

If you have over 40 cows, you need a Burrell-Lawrence-Kennedy Machine

MONROW & SHELTON, Portland, Ore., Agents for Oregon, Washington and Ida

500,000 FEET OF WATER PIPE

All sizes, Galvanized and Black, slightly damaged.
Special Price While It Lasts. Phone or write.
ADAMS PIPE & O., 603 Grant Bldg., Los Angeles, Cal. Phones: Main 1917, Home 1

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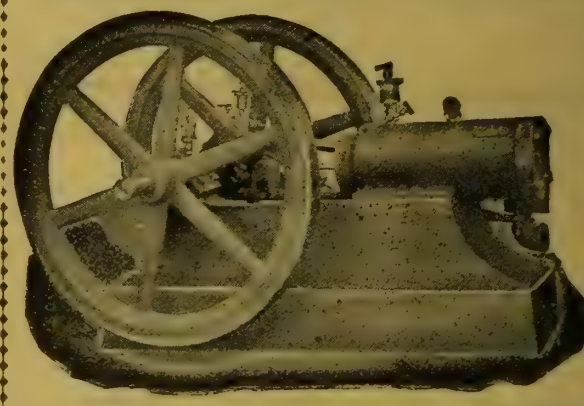

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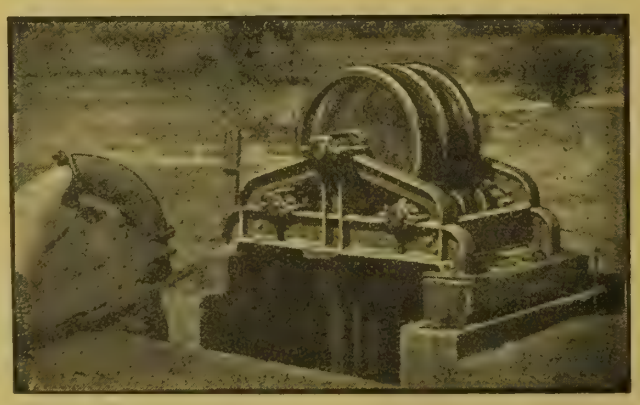
Addison Double Plunger Pump Head



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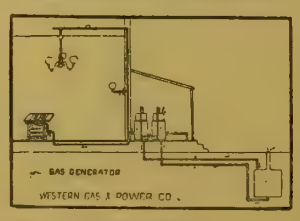
Addison Pump Company

Phones: Home 91; Sunset, Black 1551 Cor. 1st and Cypress Sts., Pomona, Cal.

WESTERN GAS GENERATORS



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The most reliable and cheapest GASOLINE GAS GENERATOR ever put on the market.
AUTOMATIC SAFE ECONOMICAL.
Read what Mr. A. W. Foster, President of the California Northwestern Railway has about them:
Gentlemen:
Replying to yours of the 20th inst., I would state that the plant installed for me by the Western Gas and Power Company, on my Hopland Stock Farm, is giving entire satisfaction, and I cannot speak too highly of it. Yours truly, A. W. Foster.
Mr. Foster used an acetylene gas generator before we installed our Western.

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STEARNS GASOLINE OR DISTILLATE ENGINE

Has many points superior to any other engine.

Hundreds In Use
Every One Satisfactory

Built for California cheap fuel.
For further information, write

STEARNS GAS ENGINE WORKS
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STABLE MANURE

We load this very carefully, eliminating all long straw or refuse. Inquire now for summer delive

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WITH A SEIVERT OIL BURNER

You can burn 100,000 feet of air with every 130 gallons of o this means perfect combustion. To burn more than 100,000 cub feet of air with 130 gallons of oil, there is a decided loss of he To burn less than 100,000 cubic feet of air there is a loss of fue
The only safe and reliable burner on the market.
Send for full particulars.

SIEVERT OIL BURNER CO. 1001 No. Alameda St., Cor. Main an Ord Sts., Los Angeles, Cal.

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Records and Supplies, delivered at your nearest railroad station upon receipt of full retail price. Write for particulars and ask for catalogue.
ofer Buciganupi & Sons, 1113-15 Fillmore St., San Francisco

DON'T BUY GASOLINE ENGINES UNTIL YOU INVESTIGATE "THE MASTER WORKMAN," a two-cylinder gasoline, kerosene o alcohol engine, superior to any one-cylinder engine; revolutionizing power. Its weight and bulk are half that of single cylinder engines, with greater durability. Cost Less to Buy—Less to Run. Quickly, easily started. Vibration practically overcome. Cheaply mounted on any wagon. It is a combination portable, stationary or tractio engine. SEND FOR CATALOGUE. THE TEMPLE PUMP CO., Mfrs., Meagher and 15th Sts., Chicago. THIS IS OUR FIFTY-THIRD YEAR.

California Cultivator

Los Angeles April 11 1907 San Francisco

A Short Story of Sunny Stanislaus

An Orange Grove Near Modesto

Stanislaus Oranges Are Ready for Market at Thanksgiving

A Stanislaus County Wheat Field

The Border Cut for Hay

The Grain Crop in This County for 1907 Should Return About $3,000,000

THE San Joaquin Valley is a great natural basin in the very center of California, and in all this great range of country "Sunny Stanislaus" county is one of the most fertile sections.

Dairying is classed as one of the leading industries of the county. During the almost incredibly short space of time that attention has been directed to this business Stanislaus County has grown in four years from twelfth to fifth place in the State in dairy produce.

Of the land now in crops, about thirty thousand acres are planted to alfalfa, which is the great crop of the irrigated lands. It is a profitable one, regarded from any standpoint. A fruit which has been planted extensively in the irrigation districts is the Smyrna fig. Extensive planting of this tree is now going on, and without doubt the locality will be a center of its production, possibly the greatest in the state. Peaches, table grapes and a great variety of fruits, even to the orange, are among the orchard assets of "Sunny Stanislaus."

Coulson's Special Dry Chick Food

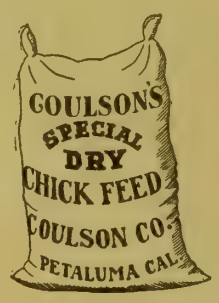
Feed to Your Chicks

And See Them Grow

Advantages of Coulson's Ready Mixed Chick Feed

The proper feeding of poultry is without a doubt the most essential factor in the raising of any kind of poultry for profit. Considerable advancement in the feeding of poultry has been made in the past few years, especially in the feeding of little chicks.

Chicks should be given a feed that makes healthy, well developed bodies. COULSON'S SPECIAL DRY CHICK FEED contains the ingredients that are best adapted to give nourishment to the growing chicks: Sweet tender seeds, cracked grains, blown free from dust, cut oat meal, tiny pieces of cooked and dried meat, fine particles of fresh cut bone, charcoal, burnt bone, and other things.



It is clean, sweet feed that is easily digested, and chicks show increase in weight, strength and beauty when fed it exclusively. Little chicks need no other food for the first six weeks. You can feed your chicks entirely on COULSON'S SPECIAL DRY CHICK FEED the first six weeks, at a cost of about 4 cents apiece.

Ask your feed dealer about Coulson's special and be sure that he does not sell you something else.

If your dealer does not keep it, write us, and we will tell you where and how to get it.

To be able to raise the chicks that you hatch and have early broilers to **SELL AT A HIGH PRICE; to raise NICE LARGE HEALTHY CHICKS;** to have chicks that will stand on the floor and crow when six weeks old; to raise chicks that you will be proud of, feed

SPECIAL OFFER.

Where Coulson's Special Dry Chick Food cannot be obtained from local dealers, we will ship, freight prepaid to any railroad station in California, 100-lb. sack for $4.00 or 200 lbs. for $7.50, cash with the order.

Pullets Lay Early

"I have fed your Special Food and Growing Chick Food to all my stock with one exception. I tried one lot of 350, and fed them my way or raising chicks back East. Results just fair. The other were fed up to three months on your Special Chick Feed, and the results were a surprise to me. The birds were large and the cockerels out of one lot I sold to the California Market and got a big price, with the request to send on to them at any time I had more cockerels of the same quality." Respectfully, A. P. WARD, Calistoga.

Coulson Poultry & Stock Food Co., Petaluma, Cal. Milwaukee, Ore.

Gentlemen:—

While in the poultry business I have tried several brands of Chick Foods and find COULSON'S SPECIAL far superior to any other brand.

Yours truly,

(Signed.) Floyd W. Scott.

Coulson Poultry and Stock Food Company, Petaluma, California

GERMAIN SEED CO., Los Angeles, Distributing Agents for Southern California

California Cultivator

Vol. XXVIII—No. 15 Los Angeles, California, Thursday, April 11, 1907 Subscription $1 a Year

Destruction of Wolves and Coyotes

A Farmers' Bulletin, Issued by the U. S. Department of Agriculture

The losses from the destruction of stock by wolves and coyotes in the Western United States amount to millions of dollars annaully and seem to be increasing rather than decreasing. Practical means of preventing these losses are urgently needed.

The present circular, based on field work of the Biological Survey, aims to present briefly the best methods of hunting, trapping and poisoning wolves and coyotes, of finding the dens and destroying the young, and of fencing to protect stock. By the methods given herein the numbers of wolves and coyotes may be rapidly diminished and the losses of stock thereby reduced to a minimum.

Capture of Pups.

If the time of breeding, character of breeding grounds, and habits of wolves are known, the dens may be easily located and the pups secured. In this way, more effectually and economically than any other, increase of wolves and coyotes may be prevented.

The large size of the litters makes the method especially important, as wolves usually have six to ten pups, and coyotes five to nine. It is now positively known that both wolves and coyotes pair for the breeding season, and that the males stay with the females and help feed and care for the pups during the summer.

Time of Breeding.

Wolf pups are usually born from March 9 to April 15 and coyote pups a little later, usually in April and May. The pups remain in or near the dens until 2 or 3 months old.

The period of gestation with the wolf, as with the dog, is nine weeks. The rutting season for the wolf, therefore, would come in January and February; for the coyote in February and March.

Location of Dens.

In the Western United States wolves breed mainly in valley and foothill country or in low mountains. For breeding dens they choose, if possible, natural cavities or washed-out hollows on south slopes of rocky or bad land ridges. There is usually a high point not far from the den, where the old male stands guard during the day.

Even on bare ground there is little difficulty in locating every wolf den. This may be done by simply riding along the crests of the ridges until the wolf tracks are found. The tracks once found, the direction of the den can often be told from the lay of the land. Near the den the tracks usually gather into well-worn trails that may be followed on bare ground as readily as on snow.

Coyotes make their dens in the same kinds of places as wolves, and also dig burrows or use old badger holes, slightly enlarged; so a spade is often necessary in getting out the young.

Ranchmen cannot afford to let wolf or coyote pups grow up on or near their ranges when an hour's ride will often serve to locate the dens. The young pups of both wolves and coyotes are nearly black, but as they grow older the color fades to dull yellowish, and when about 3 months old a new light-gray coat is acquired.

Trapping.

For wolves the best No. 4 double spring trap with heavy welded or special wolf chain should be used. If the trap is to be fastened to a stationary object, the chain should have a swivel at each end. If to a drag, one swivel next to the trap is enough. Always use a drag if possible. The best is a stone of 30 to 40 pounds weight, to which the chain is securely wired. A long oval stone is best.

A piece of telegraph wire or smooth fence wire 5 to 6 feet long should be passed around one end of the stone, then doubled through the trap ring, with a twist to hold the ring in the middle; then around the other end of the stone and back on the opposite side to connect with the first loop. If properly fastened, a jerk on the trap tends to draw together and tighten the loops, and the spring of the connecting wire prevents a sudden jar that might break trap or chain. If an oval stone is not at hand, a triangular or square stone may be used by passing the wire over the three or four sides and securely connecting it above and below.

If no stones are to be had and it is necessary to stake the traps, twisted iron stakes that can be driven below the surface of the ground should be used. They should be of good iron straps, at least 18 inches long, three-quarters of an inch wide, and three-sixteenths of an inch thick, turned over at the top into a P-shaped loop to connect with the ring of the trap chain.

When possible, place the trap between two tufts of grass or weeds, so it can be readily approached from one side only. Bury the stone, chain and trap out of sight, with the trap nearest to the runway where the wolves follow a trail or road, cross a narrow pass, or visit a carcass. The trap should be flush with the surface of the ground and the jaws and pan covered with a piece of paper to keep the earth from clogging under the pan.

Fine earth should then be sprinkled over the paper until all traces of trap and paper are concealed. The surface of the ground and surroundings should appear as nearly as possible undisturbed. The dust may be given a natural appearance by sprinkling it with water. Touching the ground or other objects with the hands, spitting near the trap or in any way leaving a trace of human odors near by should be avoided. Old, well-scented gloves should be worn, and a little of the scent used for the traps should be rubbed on the shoe soles. A piece of old cowhide may be used to stand on and to pile the loose earth on while burying the drag and trap.

For coyotes use the best No. 3 double spring trap, unless in a wolf country, where it is better to use a trap strong enough to hold a wolf. In setting the trap use the same method and bait as for wolves, but the traps may be staked or fastened to a stationary object with more safety.

Use of Scents.

Success in trapping depends largely on the use of a scent that will attract wolves and coyotes to the traps and keep them tramping and pawing there until caught. Meat bait alone is of little use and often, indeed, scares the animals away. Of the many scents and combinations tested the fetid bait has proved most successful.

Fetid bait.—Place a pound of raw beef or venison in a wide-mouthed bottle and let it stand in a warm place (but not in the sun) for two to six weeks, or until it is thoroughly decayed and the odor has become as offensive as possible. When decomposition has reached the proper stage add a quart of sperm oil or any liquid animal oil. Lard oil may be used, but prairie-dog oil is better. Then add 1 ounce of tincture of Siberian musk, or Tonquin musk. If this cannot be procured, use in its place 1 ounce of dry, pulverized castoreum (beaver castor) or 1 ounce of the common musk sold for perfumery. Mix well and bottle securely until used.

After setting the trap apply the scent with a stick or straw or by pouring from the bottle to the grass, weeds or ground on the side of the trap opposite that from which the wolf would naturally approach. Never put scent on the trap, as the first impulse of the wolf after sniffing the scent is to roll on it.

This bait is very attractive also to cattle and horses, which are sure to tramp over and paw out the traps if set where they can get at them.

Poisoning.

No poison has as yet proved so effective as pure sulphate of strychnine, provided the proper dose is used. The most effective dose is 4 grains for wolves and 2 grains for coyotes. The common 3-grain gelatin capsules sold by druggists will hold, if well filled, 4 grains of strychnine and are better than the larger capsules. The regular 2-grain capsules should be used for coyotes. The capsules should be filled, securely capped, and every trace of the intensely bitter drug wiped from the outside.

Each capsule should be inserted in a piece of beef suet the size of a walnut and the cavity securely closed to keep out moisture. Lean meat should not be used, as the juice soon dissolves the gelatin of the capsule. The necessary number of poisoned baits may be prepared and carried in a tin can or pail.

They should never be handled except with gloved hands or forceps. The baits may be dropped from horseback along a scented drag line made by dragging an old bone or piece of hide well saturated with the fetid scent, or they may be placed around or partly under any carcass on which the wolves or coyotes are feeding, or along trails which they are in the habit of following.

Gelatin capsules quickly dissolve in the juices of the stomach. Strychnine taken on an empty stomach sometimes kills in a very few minutes, but on a full stomach its action is much slower, and the animal may have time to travel a considerable distance.

Hunting with Horses.

Running wolves with horses is an expensive method of capture, though occasionally successful. With coyotes it is more common and more generally successful and in either case affords thrilling sport.

Hunting with Dogs.

Hunting wolves with dogs is usually unsuccessful, as few dogs have ever proved able to kill or hold a wolf. Ordinary trail hounds are said to drive them out of a region, but the relief is only temporary, as they soon return.

Such dogs cannot catch wolves, and the wolves often turn and kill a number of the pack. Coyotes, on the other hand, are readily caught and killed by large greyhounds or wolf hounds, which run by sight only.

Shooting

Hunters occasionally make a successful shot at a wolf and more often at a coyote, but generally hunting does not pay. However, by watching near the dens in the early morning or at dusk before the young are taken out a good hunter is sometimes able to shoot one or both of the parents.

Coyote-proof Fences.

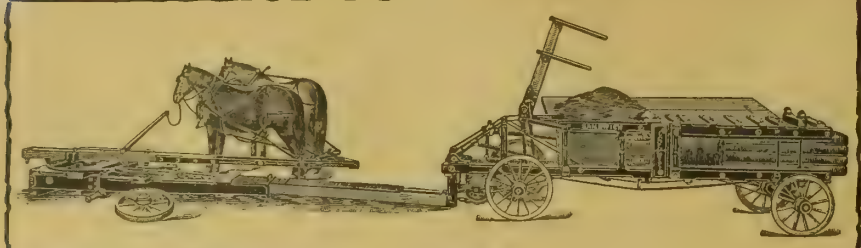
Under present conditions it is entirely impracticable to fence any great part of the western stock range against wolves and coyotes, but in many cases limited areas may be fenced to advantage. In sections where cattle are fed during the winter months, wolves often kill them on the open feeding grounds.

These, as well as small home pastures, for both cattle and sheep, could be inclosed with wolf and coyote-proof fences at relatively slight cost, often less than the value of the stock killed during one season. Preliminary tests of fences have been made by the Biological Survey, and until more thorough tests can be carried out the following is recommended as affording protection against both wolves and coyotes. Further experiments will probably show that a more economical fence can be constructed.

On posts 7 feet long, set a rod or a rod and a half apart, should be stretched one closely barbed wire along the surface of the ground. Three inches above this should be set a 36-inch strip of woven-wire fence of not over 5-inch mesh, and above this two barbed wires 6 inches apart. In the North another wire, 8 inches above these, may be added to provide for a moderate depth of snow, making a close fence practically 5 feet high. To prevent the wires from sagging away from each other, a vertical wire may be wrapped about each, at intervals of 8 feet, by a hand machine.

A fair grade of suitable 36-inch woven wire may be bought at an initial cost of 25 to 35 cents a rod, and barbed wires from 3 to 5 cents per rod each. The actual cost of fence, made as directed, can be computed only for localities where the cost of barbed wire, posts and labor is known, but

(Continued on Page 393.)



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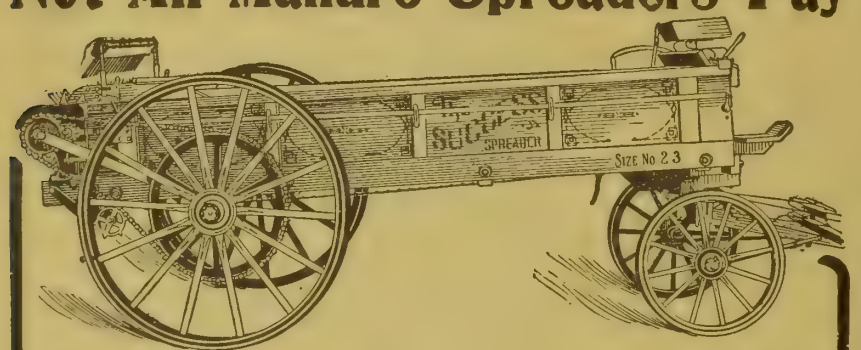

The Idea of spreading manure properly is such a good one and the benefits derived are so great you are apt to think *any* spreader will give you these benefits—that a spreader is a spreader.

There is where you may make a mistake, for some spreaders are only trouble makers and the second season they are not taken out of the shed. To make them work takes too much time and costs too much money.

If you get that kind of spreader you're apt to conclude that spreaders are made to sell and not to spread manure.

SUCCESS SPREADERS

have 28 years' experience back of them—thousands of them are spreading manure on the best farms in the country and are giving no trouble.

Twenty-eight years has eliminated the trouble making features—out of a hundred new devices and schemes that we have tried perhaps ninety have proved more harmful than helpful. They make good talking points but they don't help spread manure. SUCCESS Spreaders are made to spread manure.

When you get ready to buy a manure spreader, (and every farmer should have one) first write for our spreader book, it will help you; next go to your local dealer and see a Success Spreader but don't buy one until you have asked a man who has used one. He knows.

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Deciduous Fruit Culture

By J. W. MILLS

GRAFTING OLIVES.

THE experimental stage of olive growing is practically past in most sections of California, though it has not been so generally tried out in the now recognized olive sections of the northern part of the state.

Range in Size of Fruit.

While it is there known, as well as in the south, that the best all-around olive is the Mission, still some of the larger sizes of later introduction are known to be particularly fine and prove more productive than when grown in the south.

There are always a number of trees in plantations of any size, which are not up to standard, and there were at one time many trees of the wild olive planted throughout the state. This happened through the importation of trees and cuttings made when little was known of the industry in this state, and we were imposed upon by the foreigners who supplied the cuttings. It is very desirable to graft these poor varieties, and some of the finer varieties, which have proven to be of little or no value in certain locations.

Easy to Graft.

The olive is very easy to graft, but is not usually budded successfully. There seems to be little difficulty in getting the small piece of wood and bark containing the bud to grow, but if the bud itself has never made a growth or developed into a small twig, nine times out of ten it will never start.

Twig buds are the best, but they often fail. A twig bud is one which has recently made a twig which should not be more than an inch long. The leaves which have formed on it should not be left entire, but should be cut back half. This reduces evaporation through the bud to a certain degree and the fractional parts of the leaves keep up the respiration through the tissue and gives the buds continual nourishment.

Grafting Best.

The quickest and surest way to change an olive tree to another variety is by grafting. The season in which it may be successfully done extends from April till late in July and perhaps later. Grafting can be done at any time while the sap is running.

We have seen machine made grafts that were put in in July simply to show how the implement worked, no wrapping or wax being used, grow and make a good top. Two out of three such grafts grew, showing that it was not a mere freak. The same implement was used in a number of cases where proper care was afterward taken, and a good stand was secured. It is made on the same principle that grape grafters are made, which can be used for olive grafting also.

Scions and Suckers.

Scions must be used that will fit the cutter so that a good cut will be made on two sides, exposing the different layers of bark. That means a scion about as large as a lead pencil. It must be of last years growth with small twig buds. Dormant buds will sometimes grow and sometimes they will not, so it best to use the other.

Painting the stumps and cut surfaces where the union of stock and scion with warm wax, wrapping with cloth and painting again will make the job complete.

Allow the suckers to grow about five or six inches all over the trunks, but keep them sheared off at that length. This will protect the trees, and will not affect the grafts. After they have made a good union and start a rank growth a foot or so long, pinch off the ends and when they shade the trunks of the tree, remove all the suckers or sprouts on the trunk.

"Dry Farming" is not a dry subject to the dweller on the nigh plains. It means sure dollars where before even the dimes were often uncertain.

Many men could be righteous if they could be sure of the revenue.

COLORING FRUIT.

It is a well-known fact that the same variety of fruit will color well in one section of the country on different kinds of soils while in a different part of the country it will not color well on anyone of a variety of soils. Has any grower ever found out why?

In certain sections of the northern part of the state, Kelsey plum, for instance, will be perfectly green in color when dead ripe in maturity. In other sections it will color a brilliant red on one side.

In most situations in Southern California it will turn a dirty, greenish red that is not so attractive as the light green color developed in other places. Some writers attribute the effect to fertilizer elements in the soil and that the coloring of fruit can be controlled by fertilizers. It is our opinion that climate has more to do with the coloring than anything.

This is well-known in regard to some varieties of grapes. Some of the purplish, black varieties as grown near the coast are a jet black when grown in the desert region. Purple Damascus as grown in the Chino valley is a redish, purple. On the desert it is light in color with a faint purplish tint at the apex. Here are two examples.

Both varieties grew side by side in each locality. When grown in the desert climate, one deepened in color, ane one lost its color. This would indicate that the primary cause of change was in the variety itself. The exterior influences affected differently the individual characteristics of different varieties.

PLANTING PEACH ORCHARDS.

The land for a peach orchard, and, in fact, for many of the deciduous fruits, should be dry or of a character than can be readily drained. Peach trees particularly do not do well when planted on low, wet ground.

In planting deciduous fruit trees the same preparation of land as recommended for citrus trees is advisable. It is not often necessary, however, to use lime to any extent on virgin soils for peach trees.

Like citrus, deciduous fruit trees should be severely trimmed back when planted. Too often trees are planted with all their tops left on, as many people cannot bring themselves to cut back a tree as hard as it should be, or even at all. It looks as if that much of the top were being wasted, but, as a matter of fact, if trees are severely trimmed back when transplanted, they will almost invariably make larger tops by the end of the first year than if left with their tops untrimmed.

Peach trees are apt to set too much fruit, and this fruit should be thinned out. Commence when the fruit is of the size of a marble and continue at intervals until half grown, always removing stung or imperfect specimens. At the final thinning, reduce fruit to three or four inches apart. A heavily loaded peach tree will produce as much fruit—by measure—if three-fourths of the original number set are thinned out; and the value of the fruit on the tree that is thinned will be greater than that on the unthinned one.—G. A. Taber, Florida.

HANDLING YOUNG TREES.

When nursery stock is received, it should be immediately unpacked from the bale or box and placed in a cool, shady place, and the roots and tops thoroughly wet down. Roots of trees should never be exposed to sun and should not be allowed to become dry. Always keep them covered with moss, straw or a wet blanket when planting.

If trees cannot be transplanted immediately after they are received, they should be heeled-in in a cool, shady place and watered well until they can be set out.

If trees should be delayed in transit and arrive in a dry condition, take them out of the package and bury for two or three days in moist earth, covering tops as well as roots. This will fill out shrunken stems and limbs.

In more northern sections—and at

TREES

Every One True to Name

Citrus Trees

Our stock of all leading varieties of Oranges, Lemons, Limes and Citrons was never better, and now is an ideal time to plant.

Deciduous Fruit Trees

Cool weather and bountiful rains make it practical to plant fruit trees, Grape Vines and Roses for several weeks still. We are in the position to supply limited quantities of all leading sorts and can quote you prices which are down to bed rock. Write us for figures. It will pay you.

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A Fine Stock of Superlative Raspberry, also Fruit Trees and Vines of All Sorts. Both Phones.

P. S.—See Article in Cultivator on Page 550, Issue of December 6th.

Burbank Crimson Winter Rhubarb

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A. L. Fratt, Ventura, Cal.

Walnut Trees Stocky, Healthy Seedlings 6 to 12 ft. high. Selected seed from grafted orchard. Best variety on the market.

C. W. Sherwood, Fullerton, Cal.

rare intervals in the southern—trees get chilled in the boxes, owing to severe changes of weather en route. If any signs of ice appear in the packing material, bury the trees and packing material in earth, and leave for several days, or until the frost is thoroughly drawn out.

HOW TO PLANT TREES.

The proper way to plant a tree is to first cut off all damaged roots, then shorten top to balance, plant no deeper than tree stood in nursery. To keep borers out, and sun from burning young tree, wrap tree with an old sack, or better, get the boss tree protector, yucca bark; this will only cost you one cent each and can be had at nursery. By following this method one can get a full stand of trees, which is very desirable. Trees should be well watered when planted, then well cultivated after, with very little water. Be sure and not bark or knock off buds with whiffiletree, as this kills more trees than anything else.

THE RUSSIAN THISTLE.

Comparatively small modifications in the structure, habits and environment of a plant are capable of changing it from a harmless dweller by the wayside to a most aggressive enemy of the agriculturist.

The law of evolution holds in the case of weeds as certainly as with flowers and fruit. Nature is producing new varieties of our common garden weeds, which every now and then appear, and temporarily conquer wide territories of cultivated land.

The so-called Russian thistle, or Russian cactus, poetically called by the Russian moujiks "the wind witch," belongs to the class of "tumble-weeds" and furnishes an excellent illustration of these dangerous modifications in plant structure.

Among its relations are several species of Atriplex, shrubby plants of the desert; the pig-weed, Chenopodium; the grease-wood, Sarcobatus; and another rolling weed, Cycloloma atriplicifolia. Botanically, therefore, it belongs with some of the worst weeds known to agriculture.

It is an herbaceous annual, diffusely branching from the base and forming, under favorable conditions, a round, firm head, from one and a half to three feet high and twice as broad. Its growth is extremely rapid and the plant hardens so as to be quite thorny as early as August.

Like the common tumble-weeds of California and the middle west, the season of rolling is in the fall, when the action of the wind causes the root to break at the surface of the ground, and the plant is blown about over many miles of territory and often for many successive weeks.

The seeds are held in place in the axils of the bracts by two minute tufts of coiled hairs, which prevent them from falling all at once. A large, mature plant will sometimes bear from 100,000 to to 200,000 seeds, and the method in which these seeds are borne, as explained above, distributes them over an immense area.

The popular literature of the subject is full of stories which illustrate this point. In one instance a farmer is said to have labeled a Russian thistle and twenty-four hours afterward the plant was discovered sixty miles away!

PEAR BLIGHT.

There are very disquieting rumors regarding the pear blight, some authorities stating that there are doubts about Bartlett pears ever again being grown on a large commercial scale. This we doubt to be a permanent condition, as there will be some solution to the problem. Growers who have suffered so severely will, if they start in again, be more careful and take the disease at the start. The present disaster to the industry will be a warning that will last for all time in California.

Ballooning has a curious effect on the vision. The pressure on the visual organs decreases and the sense of sight becomes so keen that at an altitude of 6000 feet a bottle dropped to a body of water below may be observed in detail as it disappears beneath the surface.

Turn On The Rain When You Need It

IF YOU are a farmer you have seen your crops suffer for lack of moisture.

Did it ever occur to you when the drouth came what a fine thing it would be to have a stream of water running through your field, which could be turned onto the thirsty ground.

If this thought never did occur to you just stop and think a minute—water always there no danger from dry spells—no possibility of crop failure, for when you have good land, good seed and warm weather all you need to make a perfect crop is moisture—we furnish the moisture and there is absolutely no failure in the supply.

You believe in irrigation—you can't help it, for it marks the difference between absolutely sure crops and uncertainty.

Certainty is always to be preferred—therefore you believe in irrigation.

That being the case it only remains for you to choose the best spot under irrigation in which to invest your money and make your home.

All things considered, Sunny Southern Alberta is the best district in the world for the man seeking sure returns.

In the first place, the Canadian irrigation laws are the best on earth—in the history of Canada there has never been a suit over water rights—the Government stands behind the farmer and settles disputes free of cost in case there should be any, but there are none because the Government sees to it that no irrigation ditches are built unless there is ample water to supply them.

To the farmer who has had endless water litigation this means much.

The land is good in Alberta—there is no better and the constant deposit of silt and other suspended matter continually improves it.

Southern Alberta is without question or doubt the finest live stock country on earth—the summers are grand and the winters are mild as those of the Central States.

Almost any crop can be raised in Southern Alberta. It is the coming wheat, alfalfa and sugar beet country of the continent, and the markets for beef, mutton, pork, grains and all other farm products are better than those of the western states.

If you want to verify what we say by seeing Sunny Southern Alberta, we will be glad to make the trip cheap and easy for you send your name and address and learn how to get here the best way and how to get the best land on earth in the LAST GREAT WEST at prices so low that they are hardly to be considered. Address,

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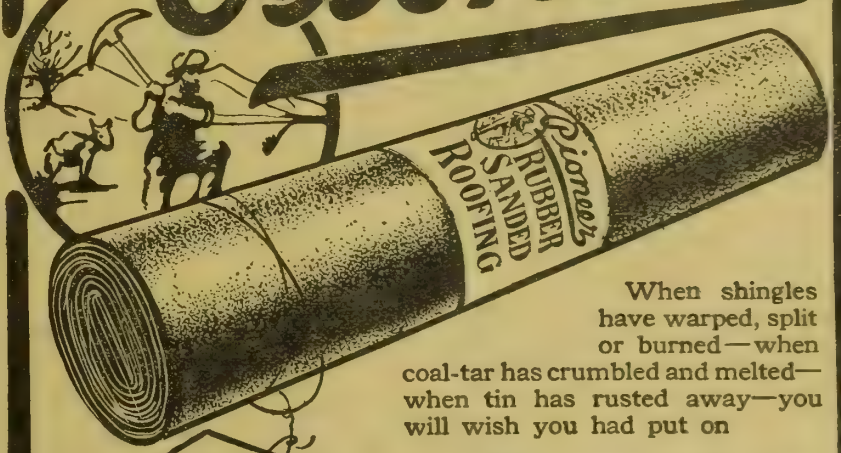

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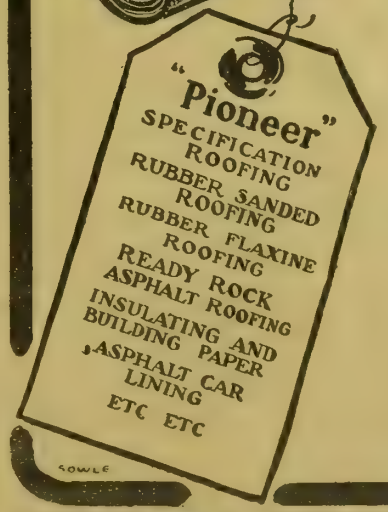

Booklet "R" will tell you all about it. A practical encyclopedia of the best roofing materials, roofing papers, building and insulating papers. It is sent free, with samples and prices. If your dealer can not supply you write to us today.

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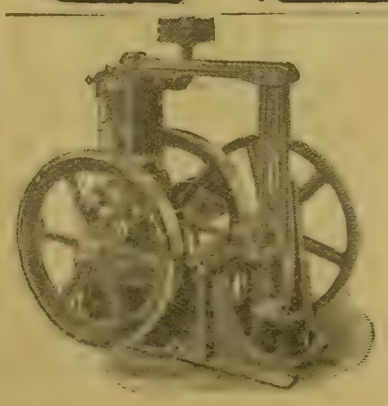

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The Cleanest Skimming Separator.

The chief reason you want a separator is to get more cream—more money— out of your milk. The U. S. gets the most.

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Both in operating mechanism and bowl construction. Three gears and the bowl are all the "machinery" there is to the U. S.

A "Simple Bowl" Separator.

Only two strong, simple, easily-handled, easy-to-clean parts inside. Gets ALL the cream.

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Few parts and those strong and finely built of the best materials by skilled workmen.

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Gearing correctly proportioned, strong but not heavy, accurately fitted, has ball bearings, and runs in oil.

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Gearing all enclosed within the solid, low, one-piece, iron frame.

Our handsome free catalogue not only tells, but SHOWS, everything about the construction and operation of the U. S. 27 pictures.

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It gives me pleasure to say that the U. S. Separator purchased of your agent has given me perfect satisfaction.

It runs easy, skims clean, and I can wash it in 4 or 5 minutes.

I concluded to purchase a U. S. after inspecting several makes of separators including the Sears & Roebuck machine which I would not buy at any price.

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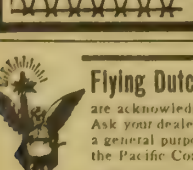

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Send 4 cents in stamps for **Flying Dutchman Song Book.**

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Our Rat Virus is the only scientific non-poisonous rodent exterminator.

Live Stock and Dairy

By Mrs. Minna E. Sherman, Fresno, Cal.

THE UDDER.

NO MATTER how perfect the form of a cow may be, if the udder is not perfect she is worthless as a dairy animal. The udder is formed of vascular tissue of great delicacy, and heavily chargeu with blood vessels. As the inside of a cow's udder with its wonderfully complicated secreting cells has been recently describeu in this department. I will pass it over. This season of the year, when there are so many cows coming in fresh, always brings with it udder troubles that are not hard to treat if taken promptly at the time, but if neglected result in loss of a quarter or half of the cow's udder.

Fresh Cows.

When the cows are freshening there is great tension in the udder, as the blood vessels become engorged. Nearly all the heifers are likely to come in this month, and will require watching. We nave had them come into milking three months before parturition. If there is milk in the udder it should be drawn. We had one heifer die and two lose the larger portion of their udders from not milking them out As soon as the milk comes draw it out, do not leave it to produce inflammation.

The heifer should be brought up into the corral, fed hay with enough bran to keep the bowels regular, but no green food. At first milk her often enough to prevent caking; if twice a day will do it, then milk twice a day.

If the milk flow persists there is nothing to do but milk her the same as any other cow, but watch, and when there is any slacking up, leave a little milk at one milking and if no bad results show leave a little next time, usually the change of feed will help out and the heifer can be successfully dried off.

Continuous Milking.

Some cows cannot be dried off, and some heifers have the milking quality so strongly bred into them they refuse to go dry, from the time the coming calf has become heavy. These will be the best cows the dairyman has ever owned, but he must handle them well, or they are lost to the herd.

If the milk flow continues in the heifer treat her the same as the rest of the herd. Now if the heifer is not brought up and cared for and milked, the following often occurs: A great swelling forms and hangs as a bag of water under the stomach and the udder takes to swelling. I have seen cases in which the milk veins along the stomach swelled until from the navel to the udder was level and the teats showed as dimples in the mass.

Don'ts.

The natural idea is at once to let out this mass of watery matter from the great sack under the cow. Don't do it! If it is done it will bring on labor and the calf is born too soon, the cow goes down into an attack of mammitis often to lose half or all of her udder. The treatment I have found best is to take the cow off grass and use saline purgatives freely. One pound of Epsom salts with one ounce of ground ginger, a tablespoonful of saltpetre. Give one dose, feed the cow a little grain, rolled barley and bran and good hay. When the bowels become normal repeat the salts, usually about the third day will be right. If the cow is thin, then add a little oil meal to the grain. If the case is acute give her plain, sweet spirits of nitre, a tablespoonful every two hours in hot water to help to reduce the effusion of water.

I am dwelling on this because I have never found it spoken of in any books. The first cases I had, the veterinary lanced the cows, and as I have had other cases reported, it seems to be the usual practice. Every case I have known of this kind failed to be successful, usually the cow lost part of the udder; the calf was always lost.

Prevention.

A preventive policy is always better than having to treat sick animals. In the spring time it will be best to put the cows and heifers that are to freshen shortly in a Bermuda or salt grass pasture and feed them good alfalfa hay. Many heifers directly from the alfalfa fields are too fat at calving-time.

It is well to have them in medium condition rather than in high flesh at this time. I often think the old idea that heifer's calves did not pay to raise came from the heifers being in plethoric condition while carrying their calves, the overfed dam starving the calf by putting the nutriment on her own back instead of laying it up in muscle bone and vitality of the calf.

Exercise.

The secretion of milk in the cow in milking draws away the excess of fats and the calf is nourished on the protein portion of the feeds and is born lean and vigorous.

In mares, it is certain that the dam that works and is in hard, lean condition rather than fat produces stronger colts than the mare that merely runs at pasture. In the palmy days of Palo Alto the high-priced brood mares pulled the gang plows; working at a slow gait being recognized as being good for the coming colts.

Love of Animals.

Every farmer should love animals. I know I love them all, except the pigs. These have never interested me at all, and as I have not been interested I do not know them, so the affection has not been cultivated. The effect of taking care of a cow or two through sickness is that it rouses an affection for them in the heart, their care becomes a pleasure and they are discovered to be interesting as characters. Whenever I read Seton Thompson's tales of the wild animals I think he would find the domestic ones are more interesting if he would study them closely; they are as civilized as we are.

Watching.

All cows that are coming in fresh should be watched; this can be easily done if the cows are put into a small corral and where they are in sight of the house.

If this is done it will save many cows from serious troubles. It is the prompt caring for the animals that are ill that cures them before the troubles become serious.

A cow is hard to treat, as they do not respond quickly to medicine. They give up when in pain. A horse is a more satisfactory patient as he responds quickly to medicine and also seems to take an interest in getting well.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fere Outfits See O. J. Weder Co., 555-557 So. Los Angeles St., Los Angeles.

ALL SHEEP.

MARY had a little lamb, its fleece was white as snow; it strayed away one day and went where lambs should never go. And Mary sat her quickly down and tears streamed from her eyes; she never found the lamb because she did not advertise. And Mary had a brother John, who kept a village store; he sat him down and smoked a pipe and watched the open door. And as the people passed along and did not stop to buy, John still sat there and smoked his pipe and blinked his sleepy eye. And so the sheriff closed him out, but still he lingered near, and Mary came to drop with him a sympathetic tear. "How is it, sister, can you tell, why other merchants here sell all their goods so readily and thrive from year to year?" Remembering her own bad luck, the little maid replies: "Those other fellows get there John, because they advertise." —Ex.

Total rain for season at Escondido, 1718 inches; for last season, 22.40 inches.

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Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

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Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

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PERCHERON HORSES
HOLSTEIN CATTLE...

2 Young Black Percheron Stallions
5 Young Holstein Bulls
10 Young Holstein Heifers
ALL REGISTERED

Minnewawa Stock Farm

Fresno, California.

For Sale Our Herd Bull Sargent Fox, 64833

As we have dispersed our herd, except a few heifers for home use, we are forced to offer for sale this valuable sire. We will sell him at a low price to a breeder who is in a position to give this bull a chance to make a record.

Leffingwell Rancho. Inc., Whittier, Cal

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OF REGISTERED JERSEYS

FOR SALE—RICHLY-BRED YOUNG bulls from cow having High Official Yearly Records. Also a few heifer calves of best breeding. For particulars address

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Frank A. Meacham, Proprietor.

Importer and breeder of RED POLLED CATTLE, SHROPSHIRE SHEEP, RAMBOUILLET SHEEP, HORNLESS AMERICAN MERINO SHEEP. Both sexes for sale. Take electric car at Petaluma or Santa Rosa for LIVE OAKS STATION. Address all mail to

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BERKSHIRE BOARS **FANCY POULTRY**

Pedigreed Registered **HOLSTEIN and JERSEY BULLS**

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Is making the very best strains of blood from the island of Jersey a specialty.

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Thoroughbred Poland China Swine
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SAN JOAQUIN DAIRYING.

Ten years ago the dairy idea in the San Joaquin valley met with general derision and creamery promoters were regarded as wolves, ready to devour the trusting investors in butter factories. The success of all well managed plants throughout the valley has shown this view to have been wrong.

Stock and grain producers have been forced into dairying under compulsion, and many of them are now milking under protest. Where they ought to be increasing the herds and grading up in quality they have a periodical sale of stock, in a vain effort to find an easier way to make a living.

The mainspring of successful dairy farming is enthusiasm for and love of good stock. Without this the business is drudgery, and to escape it every device is figured out that will bring an income, even if the farm is given away piecemeal in its grain crops. It is well understood by almost everyone concerned that dairying can be used to build up the farm, but it is usually done only to the extent of getting actual cash for farm necessities.

This tendency to evade the demands of good dairying is a direct cause of the universal complaint as to farm separator, cream and the slighting of details in its handling prevents the highest returns to the producer.

Cleanliness, the first essential in the care of cream, cannot be looked for on the average farm until enthusiasm for good dairying, love of fine stock and necessity of a better income compels cleanly and careful methods all through the details of handling this most delicate of food products.

The dairies of the valley ought to be placed on the same basis as its creameries in meeting natural difficulties. In our extremely hot season the creamery cannot operate without refrigerator, and the dairies should have an abundant supply of cold well water, and this means motive power for pumping.

Care of cream begins with the milk. Assuming that the barn is reasonably clean and that the milk is run over an aerator, in a protected room while warm and immediately separated, we will follow the cream as it leaves the separator. When well water at its lowest temperature can be forced through the ordinary cream cooler and aerator we will get the best result. The water zig-zags to the upper end, on the inside, and absorbs the heat of the cream, so that it drops into the can at the lowest water temperature

The can should have been cooled and aired, and after it has received the cream neither should be exposed to the warm air again. The can must be closed tight and covered with wet cloths, and be placed where a current of air strikes it. The use of the home cooler is better, with a continuous drip of water from the tank over the cooler; but will heavy sacking around the cans, frequently wet, until carried to the station under cover, good results may be secured.

There is a demand for fine cream at high prices, and it is safe for any dairyman in this valley of railroads and quick transportation to enlarge his herds, buying millstuff and extra feed. The use of milking machines and increase of the milk supply will make the San Joaquin valley a great dairy region. Its river bottoms and irrigation canals will produce a more abundant alfalfa crop, when the farmers go at the business of dairying in an earnest, enthusiastic spirit and plan for the future. The problem is therefore up to our farmers.—Cream Bulletin.

Hand-skimming cannot separate the butter fat from the milk as thoroughly as a separator. The loss would soon pay for a separator. Another advantage is that the calves and pigs may be fed with the milk while it is still warm with animal heat, which is much better than to have it warmed by a fire.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

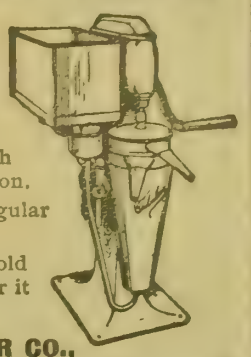
1½ more butter

If you can increase your butter production without any increased cost or any more work won't it pay you to do it? And if you can get more butter from you milk with **less work**, that will be still better, won't it? That's exactly what you can do if you will do as MR. LEITING did—buy a **Sharples Tubular Separator.** Here's what he says about the Tubular:

Randolph, Nebraska, Feb. 15th, 1906.
Gentlemen:—On the 23rd day of January, 1906, I took a No. 4 Sharples Tubular Separator on trial. On learning that I was in the market for a cream separator, the agent for the disc style "bucket bowl" separator brought one to my farm and requested me to give it a trial before making a purchase. After giving both machines a fair trial, I concluded to keep the Tubular as I consider it far superior to the other machine. It skims closer, runs easier, and is very much easier to wash, there being so many less parts. **From three skimmings of milk from 7 cows, we were able to make 1½ lbs. more butter with the Tubular than we could with the "bucket bowl" machine.** B. LEITING.

The Sharples Tubular Separator

MORE BUTTER
MORE MONEY



gets all the cream there is in the milk, does it so easy that it's not work to run it at all, and is so simple, with only one little part in the bowl to wash and keep clean that comparison is out of the question.

The extra cream it gets makes the **Tubular** a regular savings bank for its owner.

All the other good money-making points are told in book F-260, which you ought to read. Write for it today—we'll send it **free** to you.

THE SHARPLES SEPARATOR CO.,
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The "Iron Age" tools are the strongest, lightest and best. Our free illustrated booklet tells why and gives valuable suggestions.

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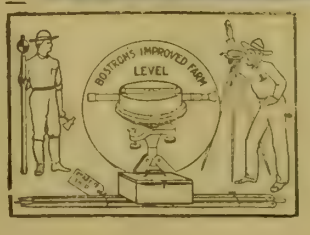

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Used for irrigation and drainage work. Cheapest and best level yet invented for farm use. Has the latest patented improvements in simplicity and usefulness. Can be operated by any one. Price including telescope tripod and target **$12.50.**

PALACE HARDWARE COMPANY,
456 Golden Gate Avenue, San Francisco.
COAST AGENTS.
Send for Circular.

One Man
One Hammer
and the roll.

So runs the brief and simple story of getting a perfect roof with

REX FLINTKOTE ROOFING

It is made on honor and backed by a firm with a business reputation covering the past 70 years.

What Should a Good Roof Do?

Protect from water, cold, heat, sparks and fumes—be laid with economy, and wear without expensive repair.

Unlike shingles, REX Flintkote ROOFING will not blaze up at the first spark—unlike slate, it will not yield to the gale of wind—unlike tar, it will not melt and run—unlike tin, it will not rust nor leak at the first chance.

Unlike them all—it may be laid by any ordinary workman—with a hammer—everything else needed is in the roll.

Unlike them all it is suitable for every kind of farm building.

Samples and Book Sent on Request

Manufacturers of cheap roofing *closely* imitate the *outside* appearance of REX Flintkote ROOFING—the value is inside—it doesn't show when you buy it. It shows only in years of honest service. "Look for the Boy" on our trade mark—and buy without hesitation.

"LOOK FOR THE BOY" TRADE MARK REX FlintKote

J. A. & W. & BIRD CO.
89 India St., Boston
W. P. Fuller & Co., San Francisco, Sacramento, Los Angeles; Portland, Oregon; Seattle, Tacoma and Spokane, Wash.

California Horticulturally

By JOHN ISAAC, Sacramento, California

END OF PLANTING SEASON.

THE setting out of young orchards is now over for the season, and despite the predictions of many growers of an overproduction of fruit, there has been a larger planting of deciduous fruits than ever before. Peaches have led by long odds, and chief of these have been cling varieties. This is largely attributable to the cannery demand. There has been also a heavy planting of apricots, while in the apple sections there has been great activity in the setting out of that fruit. In spite of the poor prices received for prunes for many past years, there has been a very large planting of new prune orchards. This perhaps is partly due to the rapid advance in the price of this fruit during the past season, which has given renewed hope to prune men. In grapes, the greatest activity has been in Flame Tokay and Thompson's Seedless. Both of these grapes are in active demand for the table and the latter is the best raisin grape in the Sacramento valley. Table grape growers have been coining money during the past few years, and the demand for this class of fruit seems to be steadily increasing. The principal table grape section, which is around Lodi and Acampo, has been flooded out during the late heavy storms and it is difficult at the present time to tell what amount of damage has been done, but it is probable that if the water is soon drained off it will not be serious.

FRUIT PROSPECTS.

Reports received from all the deciduous fruit sections of the upper portions of the state are to the effect that the late severe and driving rains have seriously interfered with the prospects for a fruit crop this season. Very many of the trees were in full bloom when the storm came and, as it was continuous for a long time, and accompanied with driving winds, it is feared that much of the pollen has been washed from the blooms and their fecundity destroyed. It is yet too early to state positively what if any damage has been done, and there is still hope that enough bloom will set to insure at least a fair if not a good crop of fresh fruit.

LADY-BIRDS BY THE BUSHEL.

Some of our California lady-birds have the habit of congregating in vast numbers in sheltered and warm locations, and in such places they may be sometimes swept up by the gallon. Some of our wide-awake orchardists, who are fully alive to the value of beneficial insects, and especially of this one genus, which is the most important of all, have made a business of gathering them and introducing them into their orchards where they do most excellent work in reducing the aphids and scale insects. This has been a regular practice in the Pajaro valley apple orchards, where the apple aphis and the wooly aphis are among the greatest pests and it has been found that these little friends of the grower will do much to keep them down and circumvent their ravages. To show in what vast quantities these insects can be procured, it may be stated that W. A. Sanborn, an apple grower near Watsonville, will establish twenty quarts in his orchard, Mrs. E. J. Sanborn ten quarts, and L. V. Willits ten quarts. Forty quarts of lady-birds, a bushel and a quarter. Just think of the number of individuals in that mass, and the quantity of aphids they will need to satisfy their voracious appetites.

BREEDING BENEFICIAL INSECTS IN ORCHARD.

When the internal parasites of the red and purple scale were received by the Commissioner of Horticulture, from China, they were found to be so exceedingly minute that it was impossible to handle them, and out of the question to ship them through the mails, and the question was raised how to best establish them in the sections where they were required for work. To solve the difficulty, it was at last decided to ship the trees on which they had been imported direct to the infested districts of the south and let them breed directly in the orchards and establish themselves in their permanent homes without removal. The first stand has been made in San Diego, and a good start of the parasites has already been established in the orchards of that country in which the red and purple scales are found. Infested trees with parasitized scales will now be taken to other parts, the next point being in Orange county, and by this means it is hoped that the little parasites of these two pests will be successfully established in all infested sections and an end put to the injurious scales.

RAINS DAMAGE CROPS.

The extraordinary wet season which we have had, especially the very severe storms of March, have very greatly reduced the chances for agricultural crops in the northern part of the state. Owing to the early and continuous rainfall a very considerable area of the northern grain section was left unsowed, as it was impossible to get onto the land; of that which was sowed a great deal has been under water during the floods and much of this is drowned out. There is, therefore, every prospect for a short grain crop. Northern farmers have suffered in other ways from the excessive moisture. Many ranches have been drowned out and hundreds of cattle and sheep have perished, while poultry has suffered enormously. It is questionable which is most to be dreaded, a dry season, or one that is too wet.

SEARCH FOR BENEFICIAL INSECTS.

The search for beneficial insects will be continued under the direction of the State Horticultural Commissioner, as heretofore. Governor Gillett has signed the Pyle bill, which appropriated $12,000 for this work for the next two years. The cost of this work to the tax-payers of the state is a bagatelle, and it should be kept up all the time. If we should succeed in securing and establishing not more than one thoroughly effective parasite in five years—and much better than this has been done—the results would amply repay the expenditure.

Lady—"Why in the world are you bringing the milk at 4 o'clock in the afternoon? Can't you get here earlier?"

Milkman—"Earlier? Why, madam, this is to-morrow morning's milk!"

They are best remembered who forget themselves.

20th CENTURY LIGHT CO.

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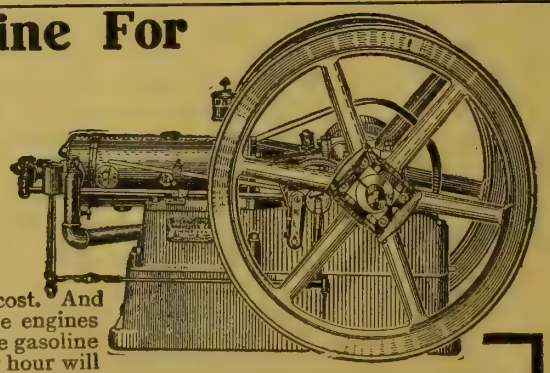

WHEN you buy an engine for irrigation pumping you don't want to get one that will require an engineer to run. What you want is an engine that will practically run itself for hours at a time. One that is sure and safe and steady, one that is simple in construction, and easily understood and operated.

I. H. C. Gasoline Engines are that kind, and for that reason are especially adapted to pumping for irrigation. A small boy can look after an I. H. C. Engine, and run it as successfully and economically as anyone. Look it over once or twice is all that's necessary in a day's run.

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Economy—To be sure, you want an engine that will pump the largest amount of water at a small cost. And here again I. H. C. gasoline engines fill the bill. Ordinary stove gasoline is the fuel, and the cost per hour will be about 1½c per horse power—about 45c a day for a three-horse power engine working 10 hours. That's cheap enough isn't it? And convenient. You can buy gasoline by the barrel, and always have plenty of fuel on hand.

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Ease of Operation, Economy, Durability—these are three good points that help give I. H. C. gasoline engines a superiority over others.

If you are now using any other power, or if you are planning to pump for irrigation this year, go to our local agent and examine these famous engines. They are made in various styles (Vertical and Horizontal, Stationary and Portable) and in sizes ranging from 2 to 20-horse power. During the seasons when not in use for pumping they can be made to serve in a hundred other ways.

Call on our Local Agent or write nearest general agency for illustrated catalogue.

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INTERNATIONAL HARVESTER COMPANY OF AMERICA, CHICAGO, U. S. A.
(INCORPORATED)

WOLVES AND COYOTES.

(Continued from first page.)

usually need not exceed 50 to 75 cents per rod for materials.

Preservation of Skins.

Prime wolf skins in fall and winter, if properly handled, are worth from $4 to $6, and coyotes $2 to $3 each, for robes or rugs. For either purpose the skin should be complete, with feet, ears and nose perfect. The feet should be split through the soles, all bones removed except the terminal segment of each toe, and the skin opened out to dry.

The ears should be partly skinned, the thick base of cartilage removed, and salt forced in between the skin and cartilage. The tail bone should be removed and the tail split along the lower side to the tip. The skin should be nailed up as nearly square as possible, with the legs wide and short, and left to dry in the shade. Many skins are spoiled by drying in the sun or by imperfect skinning.

Museums and taxidermists will often buy wolf skulls at 50 cents each if the bones are uninjured and the brains scooped out and enough of the flesh removed, so they will dry without becoming offensive. For museums they should be labeled for sex, locality and date.

Occasionally wolf bounties are paid on coyotes because county officials cannot distinguish between a large coyote and a small wolf, and in certain localities the distinction is exceedingly difficult. In doubtful cases the Biological Survey will be glad to identify the animals.

SORGHUM SUMMARY.

Though of tropical origin, sorghum is now grown throughout most temperate regions for both fodder and grain.

In 1899 about one and one-third million acres of saccharine sorghum were grown in the United States, or about one-seventieth of the area devoted to corn.

Saccharine sorghum seed is sold under many varietal names, but there are only four leading varieties in extensive cultivation viz.: Amber Orange, Sumac (or Red-top) and Gooseneck. Nearly all the others are forms of Amber and Orange.

In its general requirements sorghum is very similar to corn. It is a strong feeder and therefore will do better than corn on thin soils.

The popular idea that sorghum is "hard on the land" is probably due as much to the poor mechanical condition in which the soil is left as to the removal of plant food by the crop.

Sorghum is more resistant to drouth than corn and is regarded as a better crop for alkali soils.

Sorghum should be sown in a well-prepared seed bed when the ground is thoroughly warm. The time and method of sowing and the quantity per acre will vary with the purpose for which sown. Use plenty of seed.

The largest improved property deal in the history of the orange belt of Tulare county was consummated recently, at which time the Camilla Ranch, just east of Lindsay, was sold to Mr. R. H. Shoemaker of Los Angeles, who has been for several years conducting a shipping industry with offices in that city. The ranch is not only one of the largest orange-grove properties in the State, but one of the best improved. It contains 200 acres, nearly all of which is planted to navels and Valencia trees. The ranch is also equipped with pumping plants, underground cement irrigating plants, extensive buildings, and all other conveniences necessary in conducting the property to the best advantage. Lindsay is making great advances in the citrus industry, in fact, greater advances than any other single shipping point in that portion of the State. Mr. Shoemaker is to be congratulated upon his accession to this valuable piece of property.

Those of our readers in territory around San Francisco will find Smith's Cash Store advertisement in this paper the present week quotes an extra bargain list all along the line of goods handled by that magnificent house. Smith's Cash Store makes a specialty of mail-order rates to families, and their circulars and price list will be mailed to any one upon application. All freight orders are packed and delivered to depots free. See what one dollar will buy, and write them for their catalogue. Mention the Cultivator.

SUCCESSION OF CROPS.

In planning the location of the various crops in the garden, due consideration should be given to the matter of succession in order that the land may be occupied at all times. As a rule it would not be best to have a second plantinng of the same crop follow the first, but some such arrangement as early peas followed by celery, or early cabbage or potatoes followed by late corn or beans, and similar combinations, are more satisfactory. In the south as many as three crops may be grown one after the other on the same land, but at the extreme north, where the season is short, but one crop can be grown, or possibly two by some such combination as early peas followed by turnips.

There is no reason why a mare, if properly hitched and properly driven, should not work right up to the time of foaling; in fact, I have taken the harness off mares to allow them to foal, and have never had a loss by so doing.

A little salt and pepper mixed with the mash is good for the hens.

You Get More Harvest Profits

If Harvest Finds You Ready

TO get all the profits possible out of your harvest this year—that is a plain business proposition with you.

It needs no argument to prove that you can not be sure of all the harvest returns—no matter how favorable the outlook—unless you have made full and effective preparations before hand.

A *quick* harvest—an *easy* harvest free from breakdowns and delays due to inefficient machines—is the harvest that yields every cent of its value to you.

The vital point then is your harvesting machines. You can not afford to take chances on it. A mistake in this matter means loss of golden hours in the field, and profit-eating expenses, to say nothing of the worry.

You can not decide this question wisely when the harvest rush is on. This is one part of your preparation that you can make now, and that it pays to make now.

The test of time is one of the best guides to your selection. And when you think of harvesting machines that have proved their efficiency year after year for a generation, what names are brought at once to mind?

Champion, McCormick, Osborne, Deering, Milwaukee, Plano.

There must be a reason why these six machines have become familiar the world over—wherever harvesting is done.

It means that they have withstood all the tests of *all* conditions of harvest fields *everywhere*.

It means not only that they were built on right principles at the first, but that they have steadily led in improvements from year to year, thus holding the place they have established as the standard.

But world-wide reputation—much as it means—is not the only reason for absolute confidence in this line.

Each machine stands on its present merits, because it is built under the most favorable conditions.

The International Harvester Company is able to demand and obtain the very best materials of every kind, and the highest mechanical skill—everything that goes to make the perfect machine.

To erect and maintain experimental shops and laboratories and to employ the best specialists to work out every principle and detail—these things would not come within the reach of the ordinary manufacturer. But the International Harvester Company can and does concentrate the excellence of all its splendid equipment in these machines.

By owning and operating its own coal and iron mines, its own smelters and steel mills, and its own timber and saw mills, the International Harvester Company is enabled to select the best wood and steel that forests and mines afford.

And in addition it can and does employ the best labor.

With such advantages of increased resources, nothing but the best of material need be accepted. And it is easy to see how machines can be improved in a degree not attainable in any other way—how such rigid tests as these machines are subjected to, can be insisted on—why no machine ever leaves the works until the best qualified experts have pronounced it perfect.

All this care in the selection of materials—all the skill of labor—all the thoroughness of inspection and test—and all the perfection which these things mean and bring about goes into your machine.

Isn't it worth while to consider who gets the benefit in the end—what this concentrated effort on *your* machine would mean to you in the critical time of your harvest?

Isn't it worth your while to consider whether you will not be the gainer in a large degree by preparing for harvest or haying time with a machine that you *know?*

Harvest time is not the time to try something you are not sure of. You want all the guarantee of steady, reliable operation that you can obtain.

Manufacturers can afford to experiment, but you can not.

You want a machine that has been proved by *time*—that has been proved by use under all conditions—that has been proved by your own neighbors—and that is made under conditions that assure you that it is the best within the manufacturing possibilities.

And if repairs ever have to be made, you want to be sure that you can get them at once, and that the parts will fit This is another special advantage of these machines—repairs are always right at hand, for International local agents everywhere have them in stock.

Harvest economy and efficiency not only call for good machines but good twine as well.

International Harvester Company binder twine is made from high-grade pure sisal and manila fibers—the best raw materials that can be procured. The Champion, Deering, McCormick, Milwaukee, Osborne, Plano nd International binder twine is sold in the following grades: Sisal, standard, manila and pure manila.

Call on the International agent and get a catalog, while you have plenty of time to study it. If you don't know an International agent write nearest general agency for the name of the one nearest you.

WESTERN GENERAL AGENCIES: Denver, Colo., Portland, Ore., Salt Lake City, Utah, Helena, Mont., Spokane, Wash., San Francisco, Cal.

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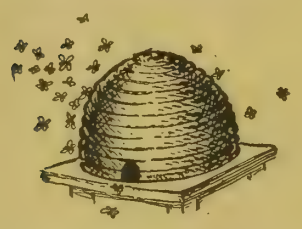

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SEE MINE, OR WRITE ME ABOUT YOUR CITRUS NEEDS. IT WILL PAY YOU.
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With the Citrus Growers

By J. W. MILLS

TURNING UNDER GREEN STUFF.

NOW is the limit of time to which the plowing under of green crops can be extended. Early in March is a better time, but the quantity of top that is formed between that time and now makes it a great temptation to withhold the plow.

Peas and Vetch.

Peas will have made an abundant growth by the first of March if planted in September or October.

Not so with the vetch. It makes its best growth in March, but up to that time it is making an abundant root growth. Peas plowed under at this time will be heavy with tough fiber while the vetch is still succulent. Here is where the vetch has the advantage of the pea-vine.

A Roller Useful.

When the plowing has been put off late and rains do not come, or show inclination to follow the work, it is best to go over the plowed land as soon as possible with a roller. This packs the soil and fills the air spaces with dirt and prevents the land from drying out.

This, of course, hurries the decay of the vegetation and fits the soil for proper cultivation for the balance of the summer. This is important, for a great part of the humus forming crop is lost if it is pulled out by the cultivator and allowed to dry on the top of the ground and finally removed.

Degenerate Orchards.

There are a greater number of degenerate orchards in which green crops are coming this year than ever before. There seems to be a feeling that the green crop is part of the correct method of bringing these old orchards out.

Now it often happens that such orchards have had very indifferent care and that the plowing has been so shallow that the larger part of the roots is near the surface and plowing at a depth of six inches will sever a large percentage of them.

The plowing at this time of the year should not be so deep as to destroy a very great many of them, but some of them should be plowed up. There is a general feeling that plowing deep for the first time especially, when the trees are blooming or setting the fruit, will cause heavy crops. This has perhaps been definitely settled, but many growers claim that such has been their experience. On the other hand certain facts go to prove that cutting the roots will have the opposite effect.

Gophers and Frost.

Gophered trees will sometimes set a heavy crop in an apparent endeavor to make a final crop to perpetuate the species. This is a recognized law of nature. However there are always exceptions, and this late cutting of orange roots is, to our mind, not definitely settled. In the meantime we would be inclined to stick to the medium and do the heavy cutting in the fall.

The question of the effect of frost on the trees may come in here, but in lieu of more definite knowledge the latter time seems to us the best. It may be that a certain time must elapse between the time of injury and the time when the plant will succeed in its final effort and produce fruit. There are many things that may enter into the kaleidoscopic workings of nature. There are other things relating to irrigation which seems to point to the fall or early winter as the best time to do deep plowing.

When green-manuring crops are to be grown continually or even interruptedly, it makes no particular difference if all of the green stuff is not turned under deep, so long as it is all finally worked into and incorporated with the soil. The removal of any of it from the grove should be strictly guarded against and for this reason it should be turned under as deeply as possible. There will always be part of it left on top to be worked in some other time.

FLORIDA ORCHARD CULTURE.

Orchard cultivation should, as a general rule, be shallow during the late spring and summer months. In all sections subject to damage from cold it is desirable to turn under the covercrop with a turn plow in the late fall or early winter after this covercrop has died down; the principle involved being that for frost protection purposes a grove should go into winter quarters with the surface of the ground entirely bare of grass and weeds. Care should be taken, however, that the plow does not run too deep. In sections free from frost danger, a cutaway or spading harrow is sometimes preferred. This cutaway or spading harrow can be used also for the first cultivation in the spring—running through the grove at such different angles as to cross and recross its own track. After first thoroughly breaking the soil in the spring, whether with turn plow, cutaway or spading harrow, it is better to follow with a surface-stirring and smoothing harrow. This should be run over the groves or orchards at intervals of one or two weeks until midsummer, the more frequently during extremely dry weather. This frequent, shallow cultivation forms a dust mulch, which serves to retain the moisture in the soil and keeps the ground in good, friable condition.

YOUNG ORANGE TREES.

Do not set trees or plants too deep particularly oranges. One can generally judge about the proper depth for setting the trees by the earth-marks on the trees showing how deep they were in nursery rows. If set at the same depth, this will be about right.

If the weather should become dry and hot after citrus or other evergreen trees are planted, they should be shaded with brush or canvas drawn over stakes on east, south and west sides, to prevent tops drying out and dying back. This is particularly desirable in summer planting.

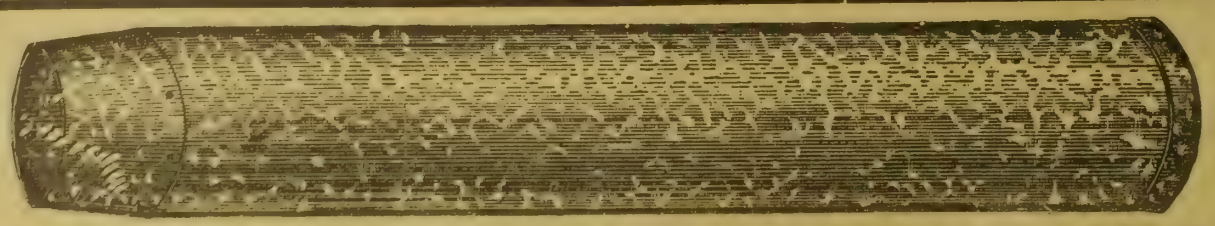
In watering, remember that one thorough drenching is worth a dozen small applications. This applies to water put on the soil. Tops may be sprinkled very frequently, the oftener the better.

IT'S PENNY WISE.

Policy to set out a good tree, costing good money and then let the sun burn the bark or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Manufacturing Company, 2124 Willow St., Los Angeles.

"Some men," said Uncle Eben, "is like de horn on an automobile. Dey ain't doin' a thing to push things along, but dey sounds like de whole works."

Never allow the foal to follow the mare when working, but keep it in a well-built, roomy box.



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The Vegetable Garden

By ERNEST BRAUNTON

GROWING SWEET POTATOES.

THE sweet potato grows readily by cuttings from the growing vine planted out directly in the field if the ground is moist and warm. This method is followed to rapidly multiply a rare variety. The usual method is to plant the crop by using sprouts from potatoes on which growth is quickly started with bottom heat. Any of the hot-bed appliances described in the chapter on propagation may be used for this purpose on a small scale, but in the warmer parts of the state it can be done on a large scale for field planting without expense of glass or cloth covering. If, however, the hot-bed is used, care must be taken against over-heating.

To grow plants in the open air, dig a trench four or five feet wide and about two feet deep; the length according to the number of plants desired. The trench should be dug in light, well-drained soil, in a place protected from cold winds. Put in fresh horse manure and tramp down until about a foot and a half of thickness is secured. Wet it well, but not enough to drain, and immediately cover with three or four inches of moist soil. Upon this place the sweet potatoes just as close as they can be put down without touching each other. When done, sift in fine sand between the potatoes and finally cover with three inches of very sandy loam, or even with sand. Keep this bed moist but not wet. Moisture and heat may be retained by covering the bed with two inches of loose straw to be removed as the shoots appear. The plants are ready for use in about eight weeks from the bedding of the tubers, when they show a few green leaves; they can be detached by pulling and will bring their outfit of small roots with them as they are pulled out of the sand. The tubers will then send up other shoots, which can be planted later.

Some prefer to uncover the potatoes, beginning at one end of the bed, removing the shoots and replacing the covering. This lessens the danger of breaking the shoots. Others split lengthwise and plant with the cut side down so that all the shoots come from the upper surface and are thus less liable to break in pulling.

Most sweet potatoes are grown on ridges to secure greater heat in the soil and to facilitate irrigation, but flat culture is also practiced, and in some regions is decidedly better. After the land is well prepared and harrowed down smooth, mark off the rows three feet apart and set the plants eighteen inches apart in the row. When the ground is thoroughly warmed by the advance of the season, say in April or May, take the shoots as described above. They must, of course, be kept from dying out, the young roots being very tender. In taking them to the field they must, therefore, be kept in a bucket with water, or in a wet sack, the former being the best. Plant out the shoots eighteen inches apart in the rows, one in a place, setting them down in the soil deep enough to find permanent moisture.

Sometimes when the object is to get unusually large potatoes, instead of pulling off and setting out the slips, the potato is lifted out and with every slip a small piece of the potato is cut out and planted with the slip. This method will bring the earliest potatoes, but the number of sets are many less than though the potato be allowed to remain in bed for their continued production. (The above is printed by request and copied from Wickson's Vegetables).

TOMATO CULTURE.

Tomatoes are readily grown from seed and the best plants are those produced with moderate heat. They need protection from cold rather than forcing heat, as our day temperatures from February onward are almost always adequate. For earlier starting of plants some bottom heat is desirable and can be profitably used if care is taken for free admission of air and subsequent hardening of the plants by later growth under protection, but at lower temperatures.

Plant the seed about the middle of February in a small box two inches in depth, and keep in the house by a south window in a moderately warm room. On warm, sunny days put them outdoors, and let them remain out day and night whenever the weather is warm enough; in this way they will make stocky plants and be much hardier than if raised altogether in the house. The soil should be rich and mellow, and always kept a little moist. When the plants appear, thin out to an inch apart. As soon as the plants begin to crowd each other, transplant to another box about four inches in depth and give them a space of four inches. By the time they crowd each other again they can be transplanted outdoors on the south side of the house or barn into a good-sized bed of rich soil. Here they can remain until they get to be large, strong, hardy plants, with very large, fibrous roots. When all danger of frost is over, take a sharp spade and cut out a square of dirt with each plant, put into rows of six feet apart, with the plants the same distance in the row. Plants can be transplanted in this way when over a foot high and in blossom. By transplanting them just at night, or on a cloudy day, they will hardly ever show a wilted leaf. Blights, if they appear, may be controlled by spraying with Bordeaux mixture.

PLAN OF VEGETABLE GARDEN.

It would be difficult to give a plan or specific arrangement for a garden that would suit all demands, and such a plan must be devised by each individual grower. Suggestive arrangements, however, are here presented, with the idea that they can readily be changed to suit local conditions.

Kind of Cultivation to Be Employed.

The first consideration in planning the arrangement of a garden is the kind of cultivation that is to be employed. Where the work is to be done mainly by means of horse tools the arrangements should be such as to give the longest possible rows, and straight outlines should be followed. The garden should be free from paths across the rows, and turning spaces should be provided at the ends. For hand cultivation the arrangement can be quite different, as the garden may be laid off in sections, with transverse walks, and the rows can be much closer for most crops. Horse cultivation is recommended whenever possible, as it very materially lessens the labor and cost of caring for the crops.

LOCATION OF CROPS.

The second matter for consideration is the location of permanent crops, such as asparagus and rhubarb, and if any of the small fruits, such as raspberries, currants and gooseberries are to be planted within the garden inclosure, they should be included with the permanent crops. The area devoted to the hotbed, cold frame and seed bed should be decided upon, but these may be shifted more or less from year to year or located in some convenient place outside of the garden.

When there is any great variation in the composition of the soil in different parts of the garden it will be advisable to take this into consideration when arranging for the location of the various crops. If a part of the land is low and moist, such crops as celery, onions and late cucumbers should be placed there. If part of the soil is high, warm and dry, that is the proper location for early crops and those that need quick, warm soil.

POOR FIDO!

The honeymoon was over, and the husband, returning from business, was grieved to find his little wife crying bitterly.

"Oh, George," she sobbed, "such a dreadful thing has happened. I had made a beautiful pie all myself, and Fido went and ate it!"

"Well, never mind, my dear," he said, cheerfully, "we can easily buy another dog."

Wright's Green Meadow Dairy
Established 1861

AUCTION

300 COWS AND HEIFERS

This is without exception one of the finest Dairy Herds in Southern California. The bulls at head of this herd are **Thoroughbred Registered** and the cows are all selected dairy stock.

200 Cows milking at present time. Many are exceptionally heavy producers—milking 60 pounds and over per day.

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One Mile West of Watts
Three Miles South of Ascot Park

Teams will meet Pacific Electric Cars at Watts Station

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Old-Time Spanish Barbecue, Free

Sale Begins Promptly at 9:30 A. M.

On account of the large amount of stock to be sold, the sale will begin promptly at 9:30 A.M. COME EARLY.
All will be sold without limit or reserve, as owners are retiring from the dairy business.

Reed & Bennett
BRIGGS & WEBER, Auctioneers
555-557 South Los Angeles Street

No Outside Stock Will Be Sold at This Sale

Does this stream of water look good to you?

It certainly does to the two men standing beside it. They are the President and Treasurer of the company to whom the plant belongs.

It is raising 40 inches of water from 250 feet below where they are standing. This water goes into a reservoir 18 feet above the pump through an 8-inch pipe-line about one-eighth mile long and you cannot see a pulsation in the discharge if you try. It has been doing this for over a year. There have been no repairs, not even new leathers, and it runs better, if such were possible, today than it did a year ago.

How many pump users can say this?

It shows conclusively that it pays to install good machinery.

We have done this for these people and we can do it for you if you give us a chance. Our catalog tells all about it. Mail us a card asking for it today.

POMONA MANUFACTURING COMPANY
Corner of Bertie and Gibbs Streets **POMONA, CAL**

California Cultivator

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J. J. STEADMAN, EDITOR

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THE CULTIVATOR.

Scarcly a day passes that the mail does not bring to this office from one to half a dozen letters, commendatory of the California Cultivator. Some like one department better than another, but all agree in the value of the paper to the agriculturists on the Pacific Coast.

Advertisers, and they do not frequently give praise to publishers, say they get the best returns from the California Cultivator of any weekly periodical in the state of California. So great has been the demand for space in the Cultivator, that for some time the publishers have been compelled to enlarge it from 24 to 32 pages. It has not been deemed good policy to eliminate any reading matter which would be of value to the paper, hence the weekly issue has been enlarged to accommodate the volume of business during the busy months.

Steadily keeping pace with the advertising business has been the subscription growth. The class of subscribers coming to the Cultivator is the very best in the state; the well-to-do class, so called, who do not take a paper for a few months, but if it meets their views, and is helpful, take it for years. They are the intelligent, progressive farmers and horticulturists who are looking for new ideas and helpful suggestions. The Cultivator is practical and helpful, and this accounts for its steady growth in circulation. The time is almost ripe for a regular thirty-two page weekly issue, and when it does come, the Cultivator will be the most valuable weekly publication west of Chicago and Kansas City. It is already the best paying proposition of its class in the West.

This is the season for the farmers of the country to repair the roads adjoining their farms for the summer. In many localities of the country the farmers put this work off until the roads are dried out and then grade them up to a high ridge in the center. This may make fall roads, but, on the same principle, good spring roads may be made, although by a somewhat different method.

THE MILKING MACHINE.

Dairymen have been slow to receive help from inventors. While almost every other branch of farming industry has profited by modern improvements, the dairyman has seen no relief from the toilsome work of milking. Not until the past two years, really, has he been promised assistance along this line, and even that slight promise has had so many backsets that he has well-nigh become discouraged. The indifferent class of milkers he has been able to secure, has provoked him to the verge of despair. Thousands of men have given up dairying altogether, because they could not get competent, honest, clean milkers. But now there has come to the dairyman a substantial relief, and it is found in the up-to-date milking machine.

After talking about it for a great many years, during most of which practically no progress was made at all, the milking machine sems at least to have been developed into a fairly complete success. It is not to be understood that there is no room for improvement still, for there will always be; but it is at least in such practical shape that it is being built and sold and practical men are using it. And the ever-uppermost question in many minds is, "Why was it not done before?" As now made and used the machine is practically a suction machine run by suitable power and capable of having a number of tubes to be attached to different cows, and operated all at one time.

Dairymen have bought these milkers and are using them, and this is pretty good evidence that they are a success, and some real advantages have been found in their use that was not contemplated by many. One of these, and a most important one, is that the milk can be put into tight cans with practically no exposure to the germ-laden air of the stables, and absolutely as pure as when it was in the bag of the cow. Of course that disgusting feature found in the milk from some dairies, dirt settled in the bottom of the vessel the milk has stood in, is eliminated.

There is no doubt that the practical milking machine is a great invention. No farm work seems to be so much objected to by a great number of farm laborers as milking. There has been no well-grounded reason for this feeling, but it has existed and does exist to this day. Why, we cannot understand, for milking is less severe than many other branches of work which the laborer is called to do on the farm. But the majority of hired help object and so the difficulty on that score can be eliminated, if one has enough cows to justify the investment in an outfit. And there is where an important question comes in. Is the milking machine going to knock out the small dairyman? At the present stage it looks very much that way. Hand labor cannot usually compete with machines. If it is, it is because "hand-made" things are better than machine-made. But, if machine-drawn milk is cleaner and better than that extracted from the cow in the old-fashioned way, there will be no hope for the hand-milking dairy.

The only possible way for them to live, the small ones, we mean, is to have the milking machines made in a small way as economically as in a large way. It would seem that this can be done as well with the milking machine as with any other appliance. But, until the time does arrive the solution of the milking problem is going to be difficult for the small dairyman just as it has been in the past. One thing is obvious, even now, and that is, that cleanliness must be the first consideration of every dairyman. Boards of Health, Sanitary Inspectors, and customers generally are going to insist, more than ever before, on clean, pure milk. In the matter of food for the human race, the question of hygiene is going to come to the front more than ever before. In the interest of health, the war on germs is going to be relentless, and cleanliness will be more than ever at a premium.

If President Roosevelt's idea of again using the great rivers of the land to aid the transportation question to final solution, shall obtain, and Congress makes the necessary appropriation of money for the improvement in our inland rivers, grain and stock in the country through which these rivers flow will be transported to market at about one-eighth the present cost.

DOMESTIC SOCIAL STATUS.

The ever perplexing question of domestic service in farm and city home life is calling out discussion among economists with widely different views. A few altruists there are who hold to the opinion that our present deplorable servant girl problem is the result of her mistreatment by her employers. They aver that there has been a steady abasement of hired help by housewives for many years until young women have come to regard the kitchen as a place to be spurned, wholly unfit for a girl of respectable birth or bringing up. These advocates of social equality between the employer and the employee, would make the world believe that all we have to do to revolutionize the present system, as it relates to hired help, to bring about an entire change in affairs, is to elevate the status of the servant in the home.

All this sounds philanthropic and nice, and may abound in unselfishness, but it is theoretical, and has failed in practical attempt in numberless cases which have come under our own observation as well as experience. The fact is that the common run of domestics are actuated solely by a desire to do just as little as they can for their employers. It matters not what kindness or attention may be shown them, they have but one thought, and that is, to hurry through their work, at what ever cost or slight, so they may spend as much time as possible in the pursuit of their own pleasures. Their employers may pay them all the attention they demand, they may even treat them with kindness, in a social way, by taking them in as members of the family, still will these domestic autocrats disregard these amenities and take every advantage to inconvenience their employer on the slightest provocation.

Who is to blame for this feeling in the heart of the domestic? A professor of the University of Nebraska, says: "It is the outgrowth of a diseased sentiment of graft which has become so prevalent in society, among all classes, from railroad president, to kitchen cook." This is the view of a majority of domestic employers today. They are forced to this, or some other conclusion, because of the treatment received at the hands of their servants.

But to be frank in discussing this question, there is no doubt that the servant girl is often slighted and mistreated by her mistress when no cause is apparent for ill treatment. Such conduct, on the part of one employer, has the effect to demoralize a whole neighborhood of servants and to create antagonisms which are unfortunate. There is a proper line of demarkation, however, over which neither employer nor employee ought to step, and it is the line of good breeding and respectful treatment, each regarding the other's rights as sacred. But to be expected to go so far as to take servants in the family on equal terms, where they may gain a knowledge of its affairs, is, in our judgement, not proper, nor conducive to family happiness. We are therefore skeptical of the proposition of elevating the servant girl to the dignity of an "equal in the household."

RECOGNIZED MERIT.

A more deserving tribute to the worth of the American agricultural college could not have been paid by Congress than that which carried in the annual appropriation bill an increase of $25,000 for agricultural instruction work. The members of congress have been slow to recognize the worth of experiment stations, but the valuable results which have come from them have awakened a desire, on the part of the agricultural class, for their enlargement and better equipment. Congress could not have done a more popular thing, nor increased an item in the appropriation bill with more lasting benefit to the country, than the increase which was made in the agricultural budget. The agricultural colleges throughout the country are doing splendid work along all lines of experimental work, and they should not be curtailed in their efforts from lack of finances. The Act of Congress increasing the agricultural appropriation is a well-deserved recognition of the merit of the American agricultural college.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

Santa Monica is building a Calfalfa factory, to grind and press alfalfa into bales.

Farmers all over the south are complaining of too rank growtn in hay crops.

Many valuable tracts of land have been lost this winter by the encrochment of the river and stream beds.

Too much rain has prevented thousands of acres from being planted or seeded in the several southern counties.

Around Brawley large quantities of alfalfa have been planted this spring, adding to the already considerable acreage.

There will be over 450 carloads of cabbages in the Olive, Fullerton, La Habra and Whittier cabbage belt this season.

At a recent meeting of the Brawley French Coach Horse Association the members of the company decided to incorporate.

O. J. Stowe of Fillmore has lost about 20 acres of valuable land owing to the river cutting in during these last storms.

Pedro Agoure and Cornelio Echenique have leased the 10,000 acres, recently a part of the Forester estate of San Juan Capistrano, for pasturage.

H. F. Wilcox, of Julian, writes us that on account of 30 inches of rainfall there the ranchers will not be able to plant over half the usual acreage of grain.

A treacherous stream tore through the valuable bean and alfalfa lands of John Donlon, near Oxnard, washing away over one hundred acres in places to a depth of five and six feet.

State veterinarians are preparing to make a big fight throughout Southern California against the Texas fever tick in accordance with the provisions of an act put through the last legislature.

There will be small shipments of cantaloupes from the desert about May 10 this year, last year's date being May 25, while carload shipments will begin by June 1, against June 15 last year.

J. A. Machandar and B. F. Ellis, who have recently bought land at Hemet, have decided to go into the nursery business, and will plant twenty acres to all kinds of trees this spring.

At Santa Ana plans are being made, under the law recently passed by the Legislature, to make a determined fight against the Texas fever tick. Orange county has been placed in charge of Dr. Schofield.

A scale on willow and a near relative of the insect which produces the American lac has been found at San Bernardino. Its name is Tachardia larreae, and to the casual observer, looks much like the black scale and is very compact on the limb.

During the past few weeks the growers of the chile pepper have been planting the seed for the coming season. The rains, while a benefit to most ranch work, have caused a "damping off" of these tiny plants, which is making the chile grower much trouble. In some cases fully one-quarter of the seedbed stock has been lost.

HORTICULTURE.

Good orange orchards, all over this state are in steady and ever-increasing demand for investment.

A twenty-acre orange orchard in Rialto was sold to a Canadian gentleman last week for $13,000.

The Hemet Packing-house shipped three cars of oranges last week, making twelve cars for the season.

The recent cold snap is reported to have played havoc with the cherry blossoms in the Yucaipe valley.

The growers of Tustin are organizing for the purpose of breaking up theft of fruit and general produce.

The deciduous fruit growers of the Ontario section claim that the apricot crop will be light this year, but the peach crop will be good.

A. J. Stowe has 15,000 or 16,000 boxes of oranges in Bardsdale and is unable to get them to the packing-house on account of there being too much water in the Santa Clara river.

Banning has made a healtny growth this season, about 150 acres of new orchards have been planted out. This represents 16,000 trees at least. A number of orders are yet outstanding.

Much citrus fruit is now thoroughly cooled before it is started east by a system of electric fans. This does away with the necessity of icing, which means a saving of $75 per car.

The orchardists of Tustin and vicinity are busy plowing orchards and otherwise cultivating the same. Those who were wise enough to plant vetch for a cover crop have been rewarded with a fine crop to turn in.

Oranges are getting puffy and soft on the trees for want of transportation to market, and unless the unexpected happens, the bringing in of a large supply of cars, very shortly the growers will lose much money.

A. Busierre, a Frenchman, graduate of the National School of Agriculture, France, has decided to locate in Santa Barbara and engage in the propagation of mushrooms for the local market and the markets of Los Angeles and San Francisco.

A new scale infection has just been brought to notice. A bunch of hoarhound was brought in the San Bernardino Horticultural office which is well covered with white scale, Icerya purchasi. Queer tastes these bugs develop sometimes.

Jesse Goodwin of Fullerton is still shipping green peas to Los Angeles. He had in seven acres this season and the crop has averaged over $100 an acre. After the peas are taken off he plants the entire acreage to potatoes. He will have another crop of peas in by April 1.

The shortage of cars for the shipment of oranges, which has been so severely criticised by the growers and shippers of Redlands sections, is proving to be a blessing. The failure to glut the market has served to stimulate prices and to keep them up to holiday point throughout the season.

The apricot crop in the Burbank section will be very light this season. The rain and frosts have killed the bloom. The rain also washed pollen from the blooms, preventing perfect fertilization. The rain and frosts have not hurt the peach crop, and there will doubtless be a large yield.

Northern California

AGRICULTURE.

Tulare is making great preparations for her second annual music festival and flower carnival.

Several of the farmers on the plains east of Suisun are making complaints that their sheep are being stolen from the ranges.

There are a few shearing machines in Shasta or Tehama county, the scarcity of sheep-shearers made the introduction of machinery an absolute necessity.

Out of the 100 head of cattle marooned on a knoll at the Rideout ranch near Nicolaus in Sutter county, but twenty-five head were lost in the flood waters.

Work on the Porterville Creamery is to be commenced immediately, and if good weather prevails the building will be ready for the installation of the machinery by the middle of May.

J. H. Pruden, who is extensively engaged in the Angora goat business near Manton, will shear his flock by machinery this spring, using a gasoline engine to furnish power for operating the patent clippers.

A capitalist from San Jose has written the Chamber of Commerce of Marysville concerning land adaptable for raising sugar cane and thinks that there is good prospects for making a profitable business industry.

A meeting of the Placer County Fair association was held at Newcastle last Thursday and plans were discussed for making the fair a success this fall. Another meeting will be held at Lincoln on April 6th for the same purpose.

Sheep owners who have recently returned from Sierra county state that there will be some warm litigation in the latter county over the collection this season of 5 cents per head imposed by the supervisors on all sheep which are grazed in that county.

Farmers about Hanford report a great growth in the alfalfa fields, and it will not be many weeks before a crop of hay will be cut. Pastures are unusually good for the season, and the hay can be stacked as it will not be needd at this time for feed for stock.

Reports are coming in from the country around Yuba City that many farmers lost stock, principally hogs and sheep, which were caught in the flood. T. L. Smith started for the Buttes with about 1000 head of sheep and lost all but 150. Walter Eager and Eli Davis are reported to have lost considerable sheep.

Frank Parker, a rancher near Nicolaus, lost 106 fine milch cows Mr. Parker saw that the levee had broken and himself and daughter started for Nicolaus to secure help. Before leaving Parker shut his cattle up in the barn and when he returned they were all drowned. His cheese factory was also washed away.

A. B. Crowell, who has recently returned from a visit in Butte, Sutter, Yuba and other counties in that part of the state, reports that there will be very little grain grown in that locality this season, as the season was too wet for putting in many acres, and what was planted has been greatly injured by floods which have come since he was there. Wheat and barley will be scarce this year.

HORTICULTURE.

Many ranchers will yet sow grain for hay, expecting to get short hay of exceptional value.

Wages creek and other streams about Westport were higher last week than ever before known.

T. H. Elliott of the Selma Fruit Company has discovered a process for pealing peaches after they are dried.

A creamery is needed at Ukiah for about $3000 goes out of Ukiah every month for butter and this should go to the farmers.

Almond trees about Corning are heavily loaded this season and indications point to a heavy crop of this popular nut.

All Northern California is getting a spasm of Eucalypt planting; the industry will prove a paying one even on the best agricultural lands.

Interviews with the orchardists of various sections of the Anderson fruit belt show encouraging reports for a good peach crop in Shasta county.

Walter Parr and Walter Shippey are engaged in planting 40 acres of lemons on a tract of land recently acquired by them at Zante, near Porterville.

Selma's seeded prunes will no doubt soon be on the bill-of-fare of the United States Army as government food experts are considering the proposition.

The orchardists about Alta have suffered greatly, many large fruit trees being broken to the stump in each orchard by the unusually heavy fall of snow..

In the Colfax district serious injury to Kelsey and Wickson plums has been caused by heavy frost, the temperature going as low as 27 and 28 degrees in some localities.

H. J. Corcoran, a progressive farmer who has a fine ranch east of Willows on the lower Butte City road, intends planting 30 acres to grapes as soon as the ground is in proper shape.

United States' army officers look with favor on California seeded prunes as a fruit diet because of the healthful properties of this fruit and the saving in weight over the ordinary dried prunes.

James Cull is planting two thousand Thompson's a seedless grapes and has already planted, this year, one thousand Lovell peaches on his ranch near Kerman. Both trees and vines were well Culled.

Contracts are already made for this year's blackberries and the figure shows that a good price is being offered. In the Sebastopol section offers of $45 and $50 per ton are being freely made.

California seeded prunes for army services will be put up at the Selma cannery in six pound tin cans, as in this form they may be kept indefinitely and the convenience in handling is a great feature.

Orchard men are much concerned over the outlook for the apricot crop in the Hollister section. The heavy rain of the past week has washed out the pollen of the budding trees, and the freeze which followed the rain, has aggrevated matters considerably. Estimates of the damage vary, though all agree that the crop has been badly hurt.

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

Buy the World's Famous Egg Food No. 4

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IF YOU WANT EGGS
YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Hap-hazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultrymen who have used these machines have supreme confidence in their ability to hatch and breed. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for greatest batch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. FILCHER, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

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For Hatching, from Captain Mitchell's Strain.
Large Birds. Prolific Layers. Large White Eggs.
Order Books Open for 1907 Season.

The Lincoln Avenue Poultry Yards

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Successor to Captain E. Pryce Mitchell
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Ask for Excelsior. If your dealer cannot supply you write us. Circular free if you mention the Cultivator.

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On the Coast—best anywhere. Made right—prices right. Guaranteed. Catalogue free. Also great **Combination Brooder.** It is great—both indoors and out.

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Also for sale by
Johnson & Musser Seed Co.
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Bemis Plymouth Rocks

Barred and White

Prizes Won at Alameda County Poultry Association Show, Oakland, 1907—22 Regular Prizes and 3 Silver Cups. Can furnish best birds and eggs at reasonable prices. No incubators lots furnished

Mrs. Florence E. Bemis, 1757 19th Ave., Oakland, Cal.

When writing advertisers, mention Cultivator.

Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

DUCKS.

A FRIEND living near San Francisco writes me, "Do you not regret that the Indian Runner Ducks have not been taken up by the farmers here? I hope that you will continue to put in a good word for them, as you know their worth. My nephew (associate editor of a poultry paper in London) writes me that there is quite a boom on in England for Indian Runners, it may reach this country; you know Americans do love to copy the English, and why should we not? They are a fine race, born fanciers, and great lovers of Nature."

Another letter is before me containing a round dozen questions about ducks in general, and Indian Runners in particular, so I decided to take "ducks" as our topic. Next week I am told we are to talk on "Water, water everywhere and plenty of it to drink!"

Indian Runner Ducks are my favorites of all that I have raised, and I feel that I shall benefit many a farmer by spreading a knowledge of the good qualities of these beautiful and wonderfully productive ducks.

Indian Runners were brought to England by a sea captain, hence the name of "Indian," whilst the "Runners" came from their extreme agility; they run instead of waddling like other ducks. In England their good qualities quickly captivated the thrifty farmers. Individual ducks there have made a record of 225 eggs per annum.

Here in California I had ten ducks which laid 2330 eggs in one year. I think this climate more nearly resembles their native land and their laying is never checked by cold and snow here. In India they were bred for their laying qualities, no attention being paid to color. Their business is to lay eggs and this they do to perfection. English breeders claim that eight-year-old ducks will lay as well as yearlings.

In England and America, breeders of Indian Runners are paying great attention to the color of the feathers, and insist upon the pure fawn and white. These ducks have now been admitted to the American Standard, and the blue bar in the wing, which was admired by the Indians, is here a disqualification, as is also the beautiful claret-colored breast.

The feathering here must be fawn and white. The head has a cap of steel gray or dark fawn with a narrow line of white round it, the neck pure white, long and thin; breast, fawn with white on the stomach; back, fawn; the flight feathers of the wings, white; the shoulders, fawn. When the wings are folded the fawn color of the back and shoulders is in the shape of a heart pressed flat. The cushion of the tail of the male is darker, almost steel gray, the legs and feet are orange. The bill in the young is yellow, but as they mature, the drake's bill becomes spotted with green, whilst the duck's is a solid cucumber green. The bills are wedge-shaped, the eyes hazel and set very high in the head.

The standard weight of the drake is four and a half pounds; duck four pounds, but many greatly exceed these weights.

Whilst the weight of the matured Pekins is more than the Indian Runners, there is more meat in proportion to their weight in the Indian on account of the smallness of the bones, the meat also is of a much finer quality, finely grained and more juicy, and at ten weeks of age their weight is the same as the Pekins.

To show the profit in Indian Runners compared with Pekins, I give here the result of a test made by the Dayton Bros., of Remsenberg, Long Island. They are among the large duck raisers, having both Pekins and Indian Runners:

Egg production—Pekins 112 eggs per year; Indian Runners, 192.

Food production one month per hundred—Pekins, 2250 pounds (about); Runners, 1500 pounds (about).

Time required to reach market size—Pekins, ten weeks; Runners, ten weeks.

Time required to reach maturity—Pekins, six to nine months; Runners, four to five months.

This is from a test continued for over a year by expert duck breeders comparing the two breeds.

Indian Runners have been called the Leghorns of the duck family from their laying so many eggs. The eggs are in quality much like hens' eggs and have not the strong, coarse flavor of other duck eggs. I have cooked dozens of them and we all prefer them to hen eggs.

I gave a setting of eggs to a friend living near Compton some time ago. She had alfalfa and an artesian well, her ducks feasted on tadpoles, little frogs and alfalfa, and she commenced on January first to keep an egg record.

Six Indian Runners laid in five months to June first, six hundred and seventy-two eggs. She had on that date sold $68.75 of eggs and ducklings and had twenty-eight young ducklings, and had then two hens sitting on twenty-two eggs, all of which hatched a few days later.

During the five months they had eaten less than one sack of bran and half a sack of cornmeal. They had coarse sand and crushed oyster shell. She kept them shut in a yard at nights, as they usually lay before breakfast and she wanted to get all their eggs. About nine o'clock she let them out and they went down to the frogs, and only came home at night when they found supper awaiting them, but were often unable to eat it as they had partaken so freely of pollywogs and frogs. She had an ideal place for ducks.

I find that the duck eggs are not as fertile in the fall as in the spring. The ducks rest from laying in Sep

Spargur's Trap-Nested White Leghorns

Eggs from 200-Egg Hens, $1.50 per 15, $6.00 per 100
From Second Best Pens, $1.00 per 15, $5.00 per 100
Indian Runner Duck Eggs $1.00 per 13, $5.00 per 100
Blue Andalusian Eggs, $2.00 per 15, prize winning birds

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1907 LOS ANGELES 190

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Have pure bloods. Eggs for hatching. Hatching chick a specialty.
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Good Laying Strain
Take Redondo car via Gardena to Strawberry Park
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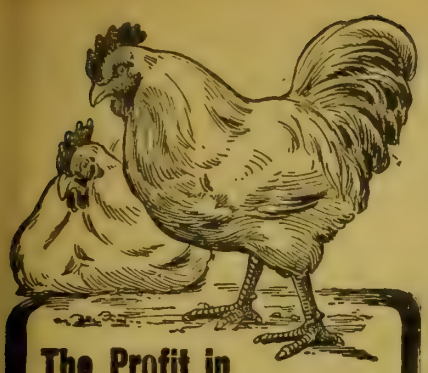

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To make a market bird consume a large amount of fattening food with **increasing appetite,** is to insure good returns at marketing time. Here is one more place where Dr. Hess Poultry Pan-a-ce-a shows surprising results. To use this wonderful tonic as directed, is to see an immediate improvement in the condition of the fowl.

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1½ lb. package, 35c. 12 lbs. $1.75
5 lbs. 85c. 25-lb. pail, $3.50

Send 2 cents for Dr. Hess 48-page Poultry Book, free.

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At the recent Poultry Breeder's Show we won eight ribbons on eight entries. "The best quality seen here for years, 1st cockerel has the best marked wing we have seen." —Pacific Fancier.
Eggs $1.50 per 15.

WHITE PLYMOUTH ROCKS

Grand laying strain, large vigorous stock, eggs especially recommended for incubator hatching, $1.00 per 15, $5.00 per 100, special mating $1.50 per 15.

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A. E Nelson, El Monte, Cal.

Eggs for Hatching

Thoroughbred White Rock eggs for hatching at $1.50 for 15. $6 per hundred. Mammoth Bronze Turkey eggs, 20 cents each. Also a dozen choice W. R. cockerels and two M. B. gobblers for sale.

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THOROUGHBRED *S. C. White Leghorns*

They are vigorous and healthy and great producers of large white eggs. They have good size, rich yellow legs and bills. Eggs from special mated pens, $1 per 15, $5 per 100

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Buff, Black, and White Orpingtons

Have for sale Trios, Cockerels and Pullets. Eggs for hatching, settings or hundreds. Write or call.

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BREEDER OF THE FAMOUS
Buff Plymouth Rocks

Winners of Five Prizes at the late Los Angeles show, the largest show ever held on the coast A few choice cockerels for sale. Eggs, $2 and $3 per 13. Write your wants.

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Eggs for hatching $1 per 13 $5 per 100 We breed from two year old hens, and the best ones of the flock only. No stock for sale. Ranch two blocks south San Gabriel car line.

Swanson & Johnson San Gabriel, Cal.

Eggs For Hatching
FROM
Standard Bred Poultry

Buff and Brown Leghorns, Buff Orpingtons, Columbian Wyandottes and Bronze Turkeys

W. W. Bliss, Duarte, Cal.

tember and October, commencing again in November. The eggs begin to be fertile by January and from the first week in February almost every egg is fertile. It has been found that one male to every ten females is the most satisfactory number to mate up in this active breed. They are most satisfactory in this climate for they never have roup, lice or mites, or any disease except sunstroke. They all need shade, and in the winter a shed to shelter them from the rain. They are the easiest to keep and to raise of any fowl, and are especially adapted to this climate.

They have never been beaten in any egg-laying contest, except in the last one in Australia, when the Buff Orpington Ducks won by a small margin. The story of that contest given in the "Australian Hen" was quite interesting. It was found that the Indian Runners required less water, and soiled the water less than any other breed, and also they ate one-third less and they laid more eggs than any with the exception of one pen of Orpingtons.

When I regretfully gave up my Indian Runners, I sold them to a friend. She, in response to my request, has sent me the picture of her first prize duck and drake, and in reply to question on feeding she says:

"We find it pays to boil vegetables for the ducks; we have what is called a farmers' boiler, which is heated by a distillate burner. It holds 20 gallons, and that is cooked full of beets, turnips or carrots every day, and divided into two meals for about two hundred ducks. It cheapens the feed and they lay as well as they could on anything.

"We are feeding now with excellent results, to our laying stock, 10 gallons of cooked vegetables, one bushel of fine cut alfalfa, one pail of feed meal, half a pail of bran, half a pail of shorts, and two scoops, or four pounds of beef scraps, half a scoop each of grit and charcoal.

"This is for one meal for about two hundred laying ducks, and is fed twice a day, with about a bushel of some other kind of green food during the day.

"I find my patch of Swiss Chard is a great success, all the fowls like it, and it produces more green food on less ground and with less work than anything I have ever seen. The ducks like it as well or better than any other green food.

"I find my Indian Runners lay one-third to one-half more eggs than my hens and are less trouble to raise and care for. The eggs sell readily in the open market for the same price as hens' eggs, and I know one retailer that sells them for five cents a dozen more than he asks for hens' eggs."

Rations.

I have profited much from your chicken talks in the Cultivator and would now appreciate a little further advice.

I have seventy-five Barred Rock pullets ten months old, in two yards and houses; yards twenty-five feet by 100 feet; houses eight feet by nine feet; three sides light, one side enclosed with burlap.

Early morning I feed a little rolled barley, after breakfast they get all the skim milk they want in earth crocks, and dry mash in hoppers composed of four parts bran, one part corn meal, one part beef scraps, one part oil meal. At noon green feed—vetch or alfalfa—all they want, at night wheat fed in straw.

Clean, fresh water twice a day.

Grit and oyster shell always before them.

They are noly laying twenty and twenty-five eggs a day, which is not enough. Can you suggest a change that would bring more eggs? Do they need salt in dry mash? Do they need beef scraps when they get all the milk they want?

They seem to be perfectly well and are practically free from lice.

Hoping I may see an answer in the Cultivator.—J. A. P., Riverside.

You are feeding a good ration, but for this climate a little "wide" that is a little fattening and I am afraid that the feed is turning to fat instead of eggs, you can discover this by hefting or weighing the pullets. There

DON'T FEED the little chicks anything for the first twenty-four hours. Then feed them dry

West Coast Chick Feed

Bright, pure, clean, made of the finest grains, seed, meat, etc., in just the right proportion to make a full, rightly-balanced ration. They like it, too, and eat it all up clean, for it contains no waste whatever. It keeps them healthy and it will make them feather faster, grow faster and larger than will any other feed. For sale by many dealers. If yours does not keep it, try another, or send to us and we will see that you are supplied.

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Exclusively

Winnings at the great Los Angeles Show, January 1 to 5, 1907:

Cocks—1st and 3rd. ***Cockerels***—1st, 2nd and 3rd
Hens—1st, 2nd, 3rd, 4th and 5th.
Pullets—1st, 2nd, 3rd, 4th and 5th. ***Pens***—1st and 2nd.
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GUARANTEED ANALYSIS:
Protein 65%
Fat 8%

Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

Raw Bone

GUARANTEED ANALYSIS:
Protein 25%
Phosphates 45%

Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods
WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

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Bred and Raised on My Ranch

Baldwin's White Leghorns

Baldwin's Leghorns are all right in blood lines and for heavy laying right straight through the year they are unexcelled. I breed nothing but White Leghorns and make them a study, aiming at quality and market value combined.

My yards are modern in every respect and I invite inspection. Think of us when you think of White Leghorns.

My best pens are made up of stock from the first prize winners at the great show at Madison Square Garden, New York, 1905 and '06.

All stock sold on a guarantee to be as represented.

Eggs, $1.50, $2.00, $3.00 and $5.00 per setting (15). Incubator lots, $6.00 and $10.00 per 100. My $6.00 eggs are from selected yards. My $10.00 eggs are from especially selected matings of my finest birds.

Send for catalogue giving full description and prices of my matings and show records.

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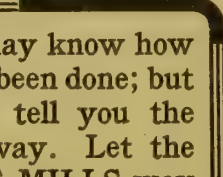

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3 MILLS—CAPACITY 18 CARLOADS DAILY

WHITE MINORCAS

Won at Alameda Poultry Association Show, 1907: 1st Cock, 1st Hen, 1st Pullet

EGGS FOR SALE—$2.50 per Setting of 15; Two Settings, $4.50; Incubator Lots $10 per 100.

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Petaluma, California

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White Wyandotte Farm

INGLEWOOD, CALIFORNIA.

Los Angeles Show Winnings

Poultry Breeders Association, 1907

1st Cock	1st Cockerel	1st Hen	1st Pullet	1st Pen
2nd Cock	2nd Cockerel	3rd Hen	2nd Pullet	3rd Pen
4th Cock				

Silver Cups—White Wyandotte Club Cup for Best Pen; Association Cup for Best Male; Wm. H. Hoegee Cup for Best Display.

Now Booking Orders for Eggs

SHADE'S RHODE ISLAND REDS

The World's best layers.

Write for Folder.

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HUSKINS

WHITE and BUFF Wyandottes

Selected eggs for hatching from special matings, only $2.50 per 15. A. W. HUSKINS, 713 Waterloo St. Los Angeles

would, however, be no harm in your reducing the oil cake; in fact, I would cut it out entirely until moulting time. You see in colder climates like Maine the fowls require the fattening food to keep them warm, whilst here they do not need it. The oil meal is also one of the expensive materials in the food. You can add a tablespoonful of salt to a bucketfull (twelve quarts) of the dry mash. I would also add instead of the oil meal one part of alfalfa meal. The straw should be at least six inches deep for them to scratch out the wheat and they should not have more than two quarts of the wheat for the seventy-five every day. If they have to scratch actively it invigorates the egg-making organs and makes them lay. At this season of the year they should be laying, with the feed and care you are giving them fifty to sixty eggs a day.—Mrs. A. B.

Chicken Queries.

(1.) Would it injure the hatch were the door of the incubator opened more than twice during hatching in taking out the little chicks?

(2.) Is there any danger of the chicks spoiling the other eggs by crawling over them after they are out?

(3.) What can one do to prevent the temperature from running down after dark? We have a fire in adjoining room from where incubator is set, and the room seems warm at all times, still it seems to run down, and we have to watch it very closely.—E. G., City.

(1.) It is considered best not to open the door because the warm, moist air rushes out and the cold air comes in and chills both the newly hatched, wet chicks and also the eggs that are still hatching, so the instructions are not to open the door.

(2.) Yes, they sometimes cover them with the white and soil them.

(3.) Close the ventilators and keep them closed at night if you are having any difficulty in keeping up the heat. Watch them for a time after you close them and be guided by your common sense how tightly to close them.

Nothing Serious.

To R. W., City:—I do not think that the shaking of the head you mention is anything serious. It occurs sometimes when the fowls have lice and it may be a little trick acquired when, as you say, he had lice and he will get over it, or he may still have a few. I have noticed it in some strains of fowls; they seem to inherit this trick without being sick or weakly, still I never like it. If you have Mr. Hoffman's stock you have good birds from prize-winning stock and better still, healthy and vigorous.—Mrs. A. B.

BRAN AND CLOVER FOR HENS.

A mess of finely-cut scalded clover, with bran, will be relished by all classes of poultry, especially if it is fed in a warm condition on a cold day. Bran contains a fair proportion of the phosphates, and for that reason may be used with the ration in order to render it more complete. It is not advisable to feed it in a soft condition if it can be used by sprinkling it on cut clover that has been scalded, although a mess of scalded bran and ground oats early in the morning of a cold winter day, is very invigorating and nourishing.

Four pounds of bran, mixed with one pound of linseed meal and a pound of ground meat, the mess slightly dampened, and fed to the hens once a day, allowing half a pint of the mixture to ten hens, will greatly add to the egg-producing materials. As a food for chicks bran should always be scalded and allowed to stand for an hour or two in order to soften, and it will then give good results, especially if mixed with equal parts of cornmeal. The clover and bran will be found a cheap ration, and should be allowed at least once every day.

SHED NEEDED FOR GEESE.

The housing of geese is a very simple problem. They have a coat of feathers that will keep the cold from injuring their system. The most rudimentary shed opens to the south or east, if it affords shelter against the storm and snow, will do. A heavy layer of straw as bedding, to be renewed whenever it gets wet or dirty affords them a chance to bunch up and keep warm.

A. J. LITTLE

White Plymouth Rocks

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Including Wm. M. Humphrey's Entire Flock of Prize Winners. Birds in my yards won at Los Angeles, 1907, the largest show ever held in the West,

23 Out of a Possible 25 Prizes

Also at San Diego, Portland, Cincinnati, San Francisco, Fresno, Oakland, Hanford and other points, under as many different judges.

50 Males
500 Females

Will sell Singles, Pairs, Trios or Pens.

EGGS

$2.50 for 15, $10.00 for 100

From special matings containing my very best prize-winners, $10 per 15. Correspondence carefully answered. Visitors welcome.

A. J. Little
Monrovia, Cal.

Get off at Mayflower, walk north two blocks, thence west two blocks to ranch.

Are You Feeding Lice

Don't try keeping hens and lice at the same time. If you do, the lice will have the benefit, the hens the annoyance, *you* the experience. Get rid of lice before experience costs too much. Dust hens, nests, platforms, every nook and cranny with

Instant Louse Killer

One or two applications will rid the house and hens of every mite and body louse. Instant Louse Killer kills lice on poultry, horses, cattle, sheep ticks, bugs on cucumbers, squash and melon vines, cabbage worms, slugs on rose bushes, etc. It is also a perfect disinfectant and deodorizer. **Sold on a written guarantee.** Comes in shaker-top can for convenient use winter or summer. See that the word "instant" is on the can, as there are many imitators.

1 lb. 35 cts. 3 lbs. 85 cts.

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Most complete stock in the West, embracing everything new of decided merit in both vegetable and flower seeds. Headquarters for Eucalyptus and other tree seeds. Full line of Fruit Trees and Ornamental Stock. *Write for Our 1907 Catalogue.*

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Sample boxes containg 620 pots for $1.50 per box. Try a box
Write for price of 3x6 sash.
CHAS. HOWARD, 2121 Park Ave. Riverside, Cal.

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The Ornamental Garden

By ERNEST BRAUNTON

THE CAMPHOR TREE.

THE camphor tree is a broad-leaved evergreen, related to the red bay and to sassafras of the United States. In its native habitat it attains a height of 60 to 100 feet, with wide-spreading branches and a trunk 20 to 40 inches in diameter.

Its general habit is similar to that of the basswood. The leaves are broadly lanceolate in form, with acuminate points at both base and apex, of a light green color, smooth and shining above, and whitish, or glaucous, on the under surface.

The camphor tree is native in the coast countries of Eastern Asia from Cochin China nearly to the mouth of the Yang-tsckiang and on the adjacent islands from the southern part of the Japanese Empire, including Formosa and the Ryukyu Islands, to Hainan, off the coast of Cochin China.

Its range also extends into the interior of China as far as the province of Hupeh, about 500 miles from the coast on the Yang-tse-kiang, in latitude 30 degrees north. This area, extending from 10 degrees to 34 degrees north latitude and from 105 degrees to 130 degrees east longitude, is all embraced in the eastern monsoon region, which is remarkable for abundant rains in summer.

The camphor trees growing wild in the native range are usually most abundant on hillsides and in mountain valleys where there is good atmospheric as well as soil drainage. The temperature in the greater part of this region, which is partly within the tropics and partly subtropical, rarely falls below freezing. The tree is an evergreen, changing its leaves generally in April, and therefore the winter temperature is a factor of more importance than would be the case with a deciduous tree.

Notwithstanding the comparatively narrow limits of its natural environment, the camphor tree grows well in cultivation under widely different conditions. It has become abundantly naturalized in Madagascar. It flourishes at Buenos Ayres. It thrives in Egypt, in the Canary Islands, in southeastern France, and in the San Joaquin valley in California, where the summers are hot and dry.

Large trees, at least two hundred years old, are growing in the temple courts at Tokyo, where they are subject to a winter of seventy to eighty nights of frost, with an occasional minimum temperature as low as 12 degrees to 16 F. The most northern localities in the United States, so far as known at this Department, where the camphor tree has been grown successfully out of doors are Charleston and Summerville in South Carolina, Augusta Ga., and Oakland, Cal.

At Charleston, Summerville, and Augusta the trees have withstood a minimum temperature of 15 degrees F., but they have been protected by surrounding trees and buildings. At Mobile, Ala., the trees have grown and fruited in protected situations, while in exposed places they have been repeatedly destroyed by frosts. While the camphor tree will grow on almost any soil that is not too wet, it does best on a well-drained sandy or loamy soil, and it responds remarkably well to the application of fertilizers.

Its growth is comparatively slow on sterile soils, but under favorable conditions it sometimes grows very rapidly. An instance is recorded of a camphor tree in Italy a foot in diameter and 90 feet high, eight years from the seed. Under ordinary conditions, however, such girth is not often attained in less than twenty-five years, and such a height is rarely attained in a century. A tree planted at New Orleans in 1883 is now 40 feet in height with a trunk 18 inches in diameter at the base and 8 feet to the first limbs. Under favorable conditions an average of 30 feet in height, with trunks 6 to 8 inches in diameter at the base, may be expected in trees ten years from the seed.

Many a man loses his heart trying to get ahead.

THE OAKS.

In the way of shade trees for lawns, parks, public grounds or avenues, there is perhaps no other tree so popular or so universally used as Oaks. Their broad spreading heads and sturdy trunks make them especially suitable for these purposes. They are very long-lived, and few other trees have the hardihood to withsand unfavorable locations and weather conditions.

Several kinds are especially suitable for planting on the seashore, as they withstand the salt spray remarkably well. Generally, but erroneosuly, supposed to be very slow growers; they are, on the other hand, of fairly rapid growth, capable of holding their own with many other forest trees. Nearly all of the varieties are exceedingly handsome in their green summer dress, and many of them are brilliant in autumnal coloring. The small trees are easy to make live, but should be well cut back at time of planting.

INSECT POISONS.

Garden insects are a great pest and many and various are the methods employed to get rid of them. We give below three recipes for poisoning these pests. The writer has used, at different times, all three for the destruction of wood lice or "sow bugs" in green-houses.

1. To a pint of cornmeal, add enough brown sugar to sweeten, mix well together and add one tablespoon of Paris green. Moisten a litle with water, just so it will hold together. Place the mixture about in small quantities wherever the bugs may be.

2. Take one pound of Paris green one pound of ordinary flour, one quart of well-slaked lime. Mix well together and diffuse with the powder bellows.

3. Mix Paris green with powdered sugar until the sugar shows a greenish color. Distribute it in the evening (in little pinches) near the hiding places of the sow bugs, and if all is eaten next morning, repeat it until all the sow bugs are destroyed.

PLANT PESTS.

Some plants are much more subject to insects than others, and they are apt to appear on these first, and then spread to the rest; and if not attended to promply, will so destroy the foliage and constitution of the plants that they will be almost a complete failure for the whole season.

Insects are sometimes brought on some old stunted plant that has been somewhat neglected. It may not appear badly infested at first, but the insects multiply and spread to the rest of the plants before the owner is aware of the destruction going on in the garden.

James J. Hill, the railroad king, says that a model farm ought to be established in every agricultural county in the United States. It should not contain more than 30 or 40 acres and the local problems should be worked out there with the help of the state.

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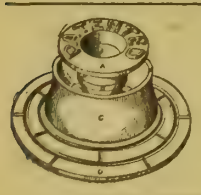

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

Soiling Crops.

Will you please give me a list of what you consider the best crops for soiling purposes?

I have eight acres of adobe soil, which I intended to plant to alfalfa, but the weather has been so wet that I cannot get the ground ready for it; I am keeping a lot of cows and will need all the feed I can grow.

Is sorghum a safe crop to grow for them, I have read that it is poisonous to stock at certain times.

Would millet do well on adobe soil? —J. L., Dos Palos.

I have no personal experience with millet as a crop, therefore cannot answer that part of your questions. I should put in some wheat or oats at once cultivating it in, and pasturing it off. As fast as it was pastured off, I would plant the land to sorghum and sweet corn, putting in, say, two acres of sweet corn. Cut and feed the sweet corn, and as soon as the land is clear, put it also into sorghum. The early Amber Sorghum seems to be the best for soiling. Cut and feed the sweet corn first; by the time the last of the corn is fed the sorghum will be ready to feed.

The sorghum starts very slowly, and does not grow fast until it has become well rooted; this is the reason for planting the sweet corn. The sorghum is drilled into rows three feet apart. It is cut with the mower set high so as not to cut it below the first joint. It may come on faster than the cows can eat it; if so, then make hay of it, cutting it and letting it lay twenty-four hours, then rake and cock it up. Watch it when it heats, open the cock and when cooled, cock again, putting the greenest on the outside of the cock.

Cured in this way it will be leathery and can be handled without losing the leaves. As to poisoning it does happen that once in a great while the young leaves of the sorghum secrete prussic acid, this is deadly. The time may come when it will be frequent enough to make it too great a risk to use. On the continent lima beans that we like so well in the United States develop this same poison. If you can raise Indian corn, I know no reason why you cannot, why do you not build a silo? With a silo full of good silage and a meadow of good alfalfa, the dairyman is king of a cow paradise.—M. E. S.

Australian Trees.

Kindly tell me through the Cultivator if the Brachychiton diversifolia. How should they be treated? To what size do they grow? Are they hardy? Why is it not in Bailey's cyclopedia? Has it another name? What was the Grevillea you recommended one time? A bush form, not the robusta. Do you know who has it for sale?—M. E. S.

Brachychiton is a botanical synonym of Sterculia and under the latter name it is found in Bailey's Cyclo. It will grow in any soil provided the hardpan is not too close to surface, for it is a tap-rooted tree and must also have good drainage. It is somewhat damaged at times by frost, though not often or seriously. It is a cranky tree, entirely satisfactory in some parts and not at all elsewhere. In the central section of the state, Porterville has many on the streets. The Grevillea is Thelemanniana—a fine shrub—do not know who has it, but will endeavor to have some dealer notify you if it can be found.

Sunburn on Walnuts.

Will you please answer in your paper if the English walnut grafted on the California black walnut will sunburn after transplanting from the nursery and oblige.—F. D. A., Lothrop.

Yes, if it is planted where English walnuts sunburn, and the stocks are English walnut clear to the ground. If it is a top graft it will not sunburn. —J. W. M.

Too Speedy.

I would like to ask you a few questions about the dairy business? I am a new beginner.

How many pounds of butter will one hundred pounds of butter-fat yield?

Why does the test go down; in the winter we had 42, now it is 28 same cows, same feed only more green grass; I do the milking myself.—J. M. R., Latin.

The overrun of butter in excess of butter fat varies from 12 to 20 per cent. The average overrun is probably 15 to 16 per cent., or a hundred pounds of butter fat will make from 115 to 116 pounds of butter. When it makes 120, as it used to do, the buttermaker is in danger of being fined for adulterating his butter with water. This is not the irrigation number or I might say it was too heavily irrigated.

I presume you mean cream. The trouble is that the separator is not fed rightly; if you have a cream screw in the machine tighten it up. If not then feed more slowly, the milk is pushed through too fast. By the eye speed in turning and then watching the stream of cream, you can soon see if it is too large, if it is, let less milk into the separator and the cream will run out thicker. I have often in the springtime to see to this, for the men forget the increase in the milk and try to separate in the same time the cream grows thin at once. If the separator has a capacity of 600 pounds of milk an hour this usually seems right for commercial cream that is about 20 per cent. it will take it longer on 40 per cent. cream, so that 450 will be found to be about all it can possibly be made to separate of 45 per cent cream. Many separators will not do this well.—M. E. S.

Take Off Your Hat.

Please send me information what to do when cows keep the milk. We have two fresh cows, sometimes they give the milk and sometimes not. I know it was in the Cultivator, but can't find it any more.—J. I., Phoenix.

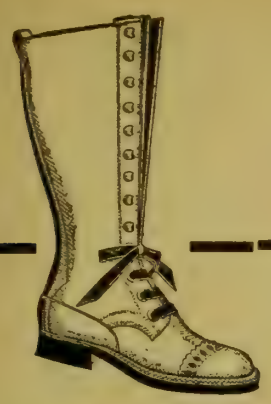
The only thing to do is to be kind and gentle, more careful and give the cows a little feed to divert their attention from the milking. Allow no loud talking around the cows and no dogs. Drive them slowly in from the fields and let them stand around the corral for a short time to quiet down before beginning to milk. It is nervous tension that stops the milk flow and the cows cannot let down their milk at will; they must be soothed. Be patient and pet them; as soon as they trust you as a friend the trouble will cease. I think it was Governor Hoard that said, or perhaps only told the story, that a cow was a lady, and if every man that milked took off his hat to her there would be fewer spoilt ones. A cow is a mother and should be treated with the greatest consideration and kindness at all times.—M. E. S.

Root Knot.

Could you kindly advise me concerning the nature of knot on raspberry root enclosed? I purchased plants of a grower near El Monte, and a great many have these knots, some as large as quails' eggs. Is it a disease, and would fruit trees take it. They are planted in a young orchard.— Country Greenhorn, Murrieta.

The knot which you sent was a small one that is very destructive to Logan and raspberry plants. When they once get these knots, the best thing to do is to dig them out. The vines will fail to mature much fruit it will dry up on the vines before it ripens.

The disease may attack young fruit trees. There is a similar disease that will attack them, as you perhaps know.—J. W. M.



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Incubators.

I am one of the readers of the Cultivator, and would like to ask you several questions on the poultry business, and will look for reply in Cultivator.

First. I have a Cyphers incubator (140-egg) and run it in a small room off our bedroom. Saturday was the 20th day and all ventilators were closed up tight, but it turned out such a hot, sultry day I was afraid chicks would smother so I opened ventilators a tiny bit during hottest part of the day; also opened door of incubator when thermometer went above 104 until it dropped to 103.

Lamp was turned so low that it was next to "out" but I was afraid to turn it out entirely as my various duties called me in and out constantly. Now what should I have done under those circumstances? It gets so hot in Los Angeles you must have had a similar experience.

Second. How do you count the days when you set machine? Say I set it on 20th at 9 o'clock a. m., would you say 20th one, 21st two, 22nd three, etc., or would you wait until completion of the 24 hours before saying one i: e: 21st one, 22nd two, etc.? My hatches have been several days late. This last one (counting 20th as 1st day) made Sunday the 21st day, but they only commenced to hatch last night. Probably my opening door retarded it slightly. Have been using drop-bottom machine and several times when temperature of room went above 75 lowered it to floor and numerous times opened it two or three inches, according to book of directions, but I believe that admits too much air and may account for late hatch. What is your opinion, please? —"Subscriber," Arroyo Grande.

(1.) The reason for the incubator directions ordering the incubator to be kept closed during the hatch, is because as soon as the door is opened the colder air of the room rushes in and the moist warm air of the egg chamber rushes out. The effect of this is to suddenly cool the damp chicks that are just out, and it at the same time chills the still unhatched eggs and retards their hatching, so the makers of the machines say, keep the doors shut during the hatch. When, however, the room is almost as warm as the air in the incubator there is not the same danger and I have often opened the incubator without injury, yet, as you can understand, there is some risk in it.

(2.) I think that your thermometer is incorrect, I think it is registering one-fourth of a degree higher than the temperature really is. One of my Cypher's thermometers did so the second year I had it, and with the same results as you describe. Get your doctor or your druggist to test it. If you set the machine at nine o'clock on the second of April, the first day would be at nine o'clock on the third, and the hatch should be all out the twenty-fourth of April. I surmise that your thermometer is marking too high, because you had a late or a slow hatch, whilst apparently you are taking excellent and intelligent care of it. One thing you do not mention, how your eggs dried out, which is important. The Cypher's Incubators are excellent, but all incubators in this climate have insufficient ventilation, especially in warm weather.—Mrs. A. B.

Too Much Crop.

As I have been a reader of your paper for the past year, and have received many helps from it I, like many other readers, have come to you for help. I have a large Barred Plymouth Rock hen, which has something the matter with her breast; it has got so large that it almost touches the ground, and everything she eats makes it hard as a rock, otherwise, she seems to be perfectly well. She lays every day; would like to know what is her trouble, and I have a White Rock pullet, which lays a double yolk egg every day, is it natural for her, or is it something she eats which causes her to lay double yolk eggs. As she is such a fine, young hen, I wanted to set her eggs, but can't as long as she lays double yolk eggs. Answer through Cultivator. —A. B. C., Laton.

Your hen has what is called a pendulous crop. Her crop, at sometime in her youth, has been over-full probably with mash, this has stretched the muscles of the crop, and it has lost its elasticity. The only cure would be to cut a piece about an inch wide out of the crop and also out of the outer skin and carefully sew them up separately, let the hen fast about two days, and then give her dry grain in small quantities, but if she is not valuable I think you had better eat her.

Some hens are habitual layers of double yolk eggs. I do not know of any cure, but I have known of pullets commencing to lay double yolk eggs and after a time when they have layed out their first clutch, they stopped this habit.—Mrs. A. B.

Lice and Mites.

We are having trouble in getting rid of lice and mites in our flock of White Wyandottes. We are able to keep our houses free of them, therefore the mites remain on the fowls during the day. We tried dipping a few in Creoleum solution—1 part to 100. It kills everything, but leaves the fowl looking dirty.

Can you remember any dip that would be satisfactory? Or any powder that would do the work?—"Redlands."

The mites, sometimes called the little red spider, live and breed in the wood of the hennery, but a few of them will also remain on the hens, they lay their eggs, as small as sand, on the wood not on the hens. You can get rid of them entirely by spraying the houses for three days running with the solution which I have often given in the Cultivator. One gallon boiling water, in which is disolved one pound of soap or soap powder, add one gallon kerosene oil and one pint of crude carbolic acid, churn violently for twenty minutes or only till you are ready to use it. Take one quart of this, add it to nine quarts of water either hot or cool, spray thoroughly. This will disinfect the house if there is any disease among the fowls, and it is an excellent dip to be used just before the moult for ridding the hens of lice and making the feathers drop easily. Of course any dip that you may use will make white fowls look dirty. —Mrs. A. B.

Whitewash for Borers.

Will whitewashing or using "Bordeaux mixture" on the trunks of small fruit trees keep the borers away?

Is it a good plan to prune the top limbs of plum trees after the fruit is ripe, when the trees are growing too tall?—P. R. J., Clovis.

Whitewash will keep the borers out of the trunks of your small trees and is good treatment for your large trees. It will not help the trees, which already have the borers.

We would not advise cutting the tops off of your plum trees till winter, and not then unless the trees are old and need renewing. If they are young, they will have a crop that will bring the limbs down without serious breaking, provided you do not trim them. If you do, when a heavy crop is set, the branches will break above the point of cutting.

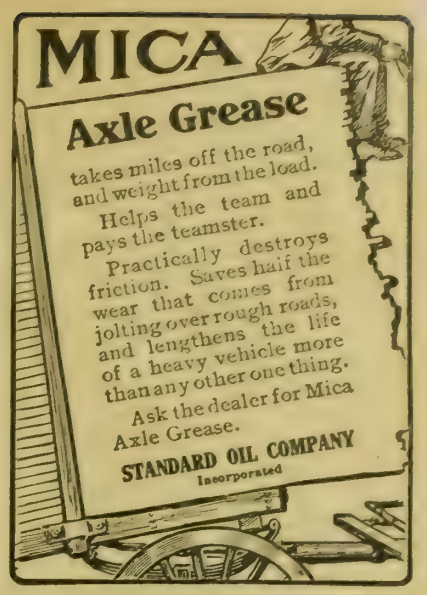
Most varieties of plum trees are improved by cutting back the rampant growth. This is particularly true of Japanese varieties.—J. W. M.

Milking Before Calving.

Would you kindly let me know if, when a cow has to be milked before calving, if she ought to be milked dry each time. Ought she to be milked at regular intervals or only when necessary.—F. W. C., Corralitos.

Only when necessary. I have had cows that it was necessary to milk twice a day. Milk clean each time, but do not strip to the limit. If this milk is not drawn the cow will swell and fill up with water and become very dropsical. I should feed her hay and bran, no grass at all, to lessen the fluids of the body as much as possible. When she has been fresh a week then feed her. This cow will probably be the best you have ever owned.

For a Good, Practical Milking Machine see the O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.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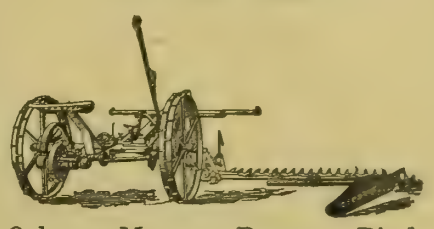

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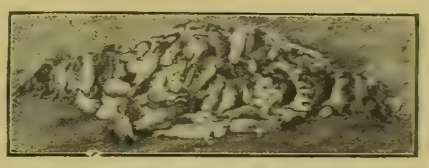

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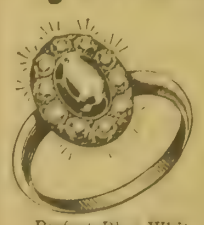

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Household Department

FOR JUST A LITTLE WHILE.

Now for a little while and for His sake
Let hatred cease, let greed be put away.
Ah, still you talk of profits you may make
And still you have one guestion:
"Will it pay?"

Why not believe for just a little while
That love is more than wealth may ever be?
Oh, why not teach the weeping ones to smile,
And why not help to give the sullen glee?

Now for His sake that in the manger lay
Let all things else be second to good will;
Ah, still you ask one question: "Will it pay?"
And greedily you strive for profit still.

—S. E. Kiser

THE DIVINITY OF POETRY.

POETRY is the record of the best and happiest moments of the happiest and best minds. We are aware of evanescent visitations of thought and feeling, sometimes associated with place or person, sometimes regarding our own mind alone, and always arising unforeseen and departing unbidden, but elevating and delightful beyond all expression; so that, even in the desire and the regret they leave, there cannot but be pleasure, participating as it does in the nature of its object.

It is, as it were, the interpenetration of a diviner nature through our own; but its footsteps are like those of a wind over the sea, which the morning calm erases, and whose traces remain only, as on the wrinkled sand which paves it. These and corresponding conditions of being are experienced principally by those of the most delicate sensibility and the most enlarged imagination; and the state of mind produced by them is at war with every base desire. The enthusiasm of virtue, love, patriotism and friendship, is essentially linked with such emotions; and whilst they last, self appears as what it is, an atom to a universe.

Poets are not only subject to these experiences as spirits of the most refined organization, but they can color all that they combine with the evanescent hues of this ethereal world; a word, a trait in the representation of a scene or passion, will touch the enchanted chord, and reanimate in those who have ever experienced those emotions, the sleeping, the cold, the buried image of the past. Poetry thus makes immortal all that is best and most beautiful in the world; it arrests the vanishing apparitions which haunt the interlunations of life, and veiling them, or in language or in form, sends them forth among mankind, bearing sweet news of kindred joy to those with whom their sisters abide—abide, because there is no portal of expressions from the caverns of the spirit which they inhabit into the universe of things. Poetry redeems from decay the visitations of the divinity in man.—Percy Bysshe Shelley.

A ROOSTER CROW.

I sometimes think I'd rather crow
And be a rooster, than to roost
And be a crow. But I dunno.
A rooster, he can roost, also,
Which don't seem fair when crows can't crow
Which may help some. Still I dunno.

Crows would be glad of one thing though.
Nobody thinks of eating crow
While roosters they are good enough
For anyone, unless they're tough.
There's lots of tough old roosters, though,
And anyway a crow can't crow,
So may be roosters stand some show.
It looks that way. But I dunno.—Ex.

REMEDY FOR CHILD LABOR.

The Secretary of the National Child Labor Committee, Samual McCune Lindsay, clearly outlines the fight for child labor reform in the department conducted by the Committee in the Woman's Home Companion for April. Dr. Lindsay gives this advice to the friends of reform:

"There should be no confusion in the ranks of those who support the Beveridge-Parsons Bill. We submit that no one can read with care the opinion of Justice Harlan representing the majority of the Supreme Court of the United States in the lottery case (188 U. S.) and have any doubt that Congress has the power to prohibit the products of child labor passing from one state into another, nor of the need of the exercise of that power expressly delegated for this purpose to furnish a remedy for the citizens of one state against evils inflicted upon them by another over whose acts they have no other control than through the nationay government.

"All the points that are involved in this controversy are taken up and presentd by able counsel on opposing sides. Every argument advanced against the present Beveridge-Parsons Bill now pending in Congress was advanced with ample citations of cases by the learned counsel in the lottery case. An article made of child labor is an article of commerce. It has a depreciated value the minute it is so labeled, in the estimation of the purchasers.

"The only remedy is that expressly provided for just such a case, in the power delegated to Congress to regulate commerce, which the Supreme Court has already interpreted in the language of the great Chief Justice Marshall as the power to regulate intercourse, and again and again as the power to prohibit, if necessary, the products of one state entering another."

THINGS WORTH KNOWING.

A housekeeper should always think it worth some effort to keep her bed-ticking bright and clean, for ticking is very hard to get clean again when it once becomes dingy or soiled by long usage. Pillow ticking may be kept clean and its pattern prevented from showing through the case if an extra cover is used next to it and a set of these cases made to fit and and buttoned on, costs but little time or material and will last for years.

When the handles of steel knives used in the kitchen become loose or come off, they can easily be mended with resin. Pour a little powdered resin into the handle, then hold the iron rod in the fire until it is red-hot, and thrust it quickly into the handle and when it is cool, the handle will be firmly fixed.

Plenty of hot water and clean towels are the essential requisites for expeditious and thorough dish-washing, and the dishes may be kept shiningly clean by washing them through a warm suds to which a teaspoonful of borax has been added, and every few days the coffee-pot should be boiled out with a strong borax solution, otherwise the grounds will accumulate in the tiny crevices at the bottom. It is equally important to keep the tea-kettle clean—a part of the kitchen outfit which seldom receives all the attention it should.

Enameled sauce-pans soon become discolored, and an easy way of removing the stains is to put a little chloride of lime in a pan, fill it up with cold water and set it on the back of the stove where the water will keep hot,and let it remain for several hours, then scrub with hot suds and it will be perfectly white.—M. H.

Distilled water is far better than the ordinary kind for greasy skin and all others. An ounce of dried rose leaves in half a pint of vinegar left to stand on them for a week then adding rose water is a good remedy. Wash the face with a tablespoonful of this in distilled water and it will prove efficacious on the greasiest skin.

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THE MOTHER AND HER GIRLS.

"Do not be unduly disturbed, dear mother, at the dawning of a day almost sure to come in your experience with your girls," advises Mrs. Sangster in Woman's Home Companion for April. "If they have strong characters, if they are able to stand on their own feet, they will reach a station where the train they take may lead them away from you. Girls have said to me, with a shade of sadness, that they regretted that they must sometimes make decisions of which their mothers did not approve. One of the temptations to which we fallible mothers are liable is that of ignoring the obvious fact that grown-up daughters or daughters nearly grown are not babies any longer and are not to be compelled to yield their individuality to ours. There are crises in young lives, and the only thing for a mother to do, having given such counsel as she thinks best, is to leave her daughters entirely free to work out their own problems. Enormous trouble and overwhelming disaster may follow interference in the management of other people's lives, and although daughters are part of your own existence, yet you cannot treat them as if you were an autocrat. Give your daughters room for individual expansion and liberty of choice."

FUN IN THE HOME.

The home should be made the jolliest place on earth for the children. Don't be afraid of a little fun at the family fireside. Don't let the boys think that all mirth and social enjoyment is barred from the home, if you wish to keep them away from places that lead to vice and degradation. Young people must have fun and relaxation somewhere, and if they do not find it in their home, they will seek it at other and less desirable places. Parents should not repress the buoyant spirits of their children, but join in their merriment around the home fireside. The children will lose none of their respect for their father or mother if they occasionally loosen their "dignity" and take part in the children's fun and sport. An evening's romp and play with the young folks will drive dull care away and dispel the memory of many an annoyance of the day. Have fun at home.

TOMATO CREAM SOUP.

To make a delicious tomato cream soup place a cupful of tomatoes over the fire to heat, adding a pinch of soda and a little water. When heated through strain carefully to remove every seed and add to one pint of boiling milk that has been thickened slightly with flour and butter rubbed together until smooth. Boil up once, season with salt and paprika and serve with croutons.

GOOD GINGERBREAD.

One-half cup molasses, 1-4 cup white sugar, 1-4 cup butter, 1 egg, 1-2 cup sweet milk, 1 heaping teaspoon ginger, 1 good cup flour, 1 teaspoon baking powder. Beat butter and sugar to a cream, add molasses, egg, milk and flour. Always put the baking powder and ginger in the flour before sifting. If the milk is on the turn add a pinch of soda in the flour. Bake in moderate oven.

GRAHAM MUFFINS

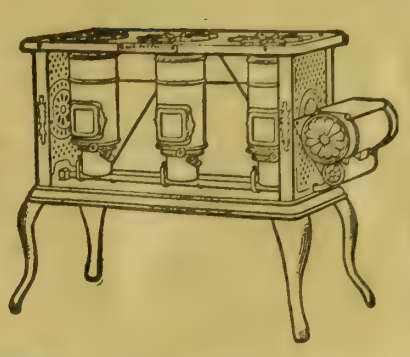
Mix one and one-half cups sifted graham flour, one-half teaspoon salt, two level teaspoons baking powder, and one rounded tablespoon sugar. Stir in one and one-half cups milk, or part water and part milk, and one well-beaten egg. Beat well and bake in hissing hot gem pans twenty minutes.

FRIED PARSNIPS.

Boil until tender and slice them in long, thin slices, dip into a batter made as for pancakes, and fry in hot lard until brown, adding salt and pepper to suit the taste.

"Here come's a man" the green plum cried;
"I wonder what he's after"
"You watch your trunk," the pear replied;
"That fellow is a grafter."

What "Blue Flame" Means

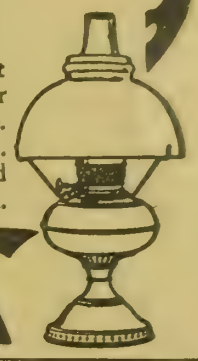


It means the hottest and cleanest flame produced by any stove. This is the flame the New Perfection Oil Stove gives the instant a lighted match is applied—no delay, no trouble, no soot, no dirt. For cooking, the

NEW PERFECTION
Wick Blue Flame Oil Cook-Stove

is unequaled. It gives quick results because its heat is highly concentrated. Cuts fuel-expense in two. Made in three sizes. Every stove warranted. If not at your dealer's write to our nearest agency.

The Rayo Lamp is the best lamp for all-round household use. Made of brass throughout and beautifully nickeled. Perfectly constructed; absolutely safe; unexcelled in light-giving power; an ornament to any room. Every lamp warranted. If not at your dealer's, write to our nearest agency.



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BUFF ORPINGTON DUCKS—248 EGGS IN 145 days from our two imported ducks. Eggs $3 per doz. Nothing better to raise. GOODACRE BROS., Compton, Cal.

PEKIN DUCKS—STOCK DUCKS $1.50 each; young at $1 each; 2 extra drakes $3 each; all our Cup Winning Strain. GOODACRE BROS., Compton, Cal.

EGGS FOR HATCHING.

McKINLEY POULTRY FARM—BREEDERS of buff and white Wyandottes. Member American Buff Wyandotte Club. Golden Seabright and Pyle Game Bantams. Eggs $3.00 and $2.00 per 13. Take San Pedro Interurban car to McKinley, first house north. BOX 11, R. F. D., Gardena, Cal.

BLUE RIDGE POULTRY YARDS, W. H. Brown, Prop., 128 Ave. 32, Los Angeles, Cal. Breeder of Blue Andalusians. Won more first prizes than all our competitors combined. All specials went to our strain. Eggs $1.50 and $2.00.

MY WINNINGS AT THE LATE BREEDERS' Show on Rose Comb Black Minorcas were three prizes from four entries. Eggs two dollars per fifteen. Correspondence solicited. M. E. BROWN, Box one hundred, R. R. No. one, Los Angeles, Cal.

HAVE PURCHASED FROM W. A. STEWart the pen of Black Orpingtons that won 1st at Dairy Show, London last year, 1st at Breeders' Show, Los Angeles 1907. Will sell a few settings. ROSS & TATE, Altadena, Cal.

WHITE LEGHORN AND WHITE WYANdotte eggs for hatching, from extra choice, trap-nested, bred-for-eggs stock. Leghorn eggs $5.00 per 100; White Wyandotte eggs $1.00 and $1.50 per setting, $6.00 per 100. F. T. McLAUGHLIN, Gardena, Cal.

S. C. WHITE LEGHORN EGGS FROM THE bred-to-lay Blanchard strain. Large birds. $1.00 for 15; $6.00 per 100; Free city delivery. C. M. GIBBS, R. F. D. No. 4, Los Angeles, Cal. Phone W. 591.

FOR SALE—PURE BRED STOCK, S. C. White Leghorn Eggs. Large eggs, great layers, eggs for hatching only. $1.50 per 15; $6.00 per hundred. RICHARD POWERS, Anaheim, Cal.

BUFF ORPINGTONS—EGGS FOR HATCHing. $2 per 15; L. C. Black Minorcas, $1.50 per 14. $3 per 100. Also S. C. Whits Leghorns, $1.00 per 15, $4 per 100. SCOTIA POULTRY FARM, Fowler, Cal.

35c PER DOZEN; S. C. WHITE LEGHORN eggs for hatching, fine stock, large eggs, 95 per cent. fertile. Carefully packed. MATT MARTIN, R.F.D. G street, Ontario, Cal.

FARM LAND.

FOR SALE—A BARGAIN. 40 ACRES BEST orange land in Lindsay district, at Lindsay, Cal. 7 acres set to Washington navels. Good well, new pump house and barn. Some household goods; surrey and double set harness; farm implements. Best of reason for selling. Call on or write MR. ENSIGN, 222 West 2nd street, Los Angeles, or write MRS. WILL A. FRITCH, Jr., Prospect, Ohio, for further particulars. $2800 cash; $2300 on 4 years time.

FARM LAND—5 ACRES ¼ MILE FROM car line; 3½ acres in alfalfa; with water right. Take San Pedro Interurban car to McKinley. Inquire house opposite McKinley arch. BOX 18, R. F. D. Gardena, Cal.

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WEST COAST POULTRY FOODS AND REMedies are the best made and, quality considered, the cheapest. If your dealer doesn't sell them, send to us. Booklet free. Send us names of 12 persons keeping poultry and we will send you free "The Poultry Manual" by those high authorities F. L. Sewell and Ida E. Tilson, profusely illustrated. WEST COAST STOCK FOOD CO., 813 San Fernando St., Los Angeles, Cal.

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FOR SALE—INDIAN RUNNER DUCK EGGS, fine stock, 50c per dozen; $3.50 per 100, 80 per cent fertile. JOHN W. LYON, E. Palm Ave., Gardena, Cal.

BUFF ORPINGTONS—EGGS $2 PER 13, good even flock. Trios $7 up; Pens $10 to $18. Don't delay. GOODACRE BROS., Compton, Cal.

HOMERS FOR SQUAB BREEDING. GUARanteed mated birds. Prolific breeders, $1.50 a pair. EMMA V. WEATHERS, Nipomo, Cal.

R. I. REDS—EGGS $2, CHOICE IMPORTATIONS; a large trio for $8. GOODACRE BROS., Compton, Cal.

BLACK ORPINGTONS—TWO TRIOS $15 each. Eggs $3 per 13. GOODACRE BROS., Compton, Cal.

TURKEYS.

FOR SALE—THOROUGHBRED MAMMOTH Bronze Turkey Eggs, $2.50 per setting of 13. J. E. PECK, Calexico, Cal.

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YOUNG REGISTERED JERSEY BULLS from choicest cows of Judge Peter J. Shields' herd. $35 per head. Prize winning sires and dams. Pedigrees sent for inspection. TRIBBLE BRO'S, Elk Grove, Cal.

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WANTED—SOME SECOND-HAND SHEET iron galvanized surface irrigating pipe. Address, BOX 297, Corona, Riverside Co., Cal.

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FOR SALE—4000 VALENCIA AND 1000 W. Navels; one year buds on three year roots, clean and vigorous; buds taken from bearing trees. F. E. CHAPMAN, R. F. D. Box 34, So. Craig Ave., Pasadena, Cal.

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This machine is an improvement over any kind hitherto manufactured. It is practically unfailing, regulating temperature and ventilation in a way that is almost wonderful. The large poultry raisers throughout the Coast are installing them. They require less attention. They do not disappoint.

No one should buy any incubator or brooder without investigating the Glendale Incubator and Brooder.

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The 120-egg size, $22; 240-egg size, $32; 360-egg size, $42; 500-egg size, $52.

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WHY PAY more when you can get Eggs from Selected Pens of a Heavy-Laying Strain for $1 per 15; $1.80 per 30; $2.50 per 50; and $4.75 per 100?

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Eggs $1 and $1.25 per 15, $4 and $5 per 100. New stock of the Richland 200-egg strain.
C. C. Hockabout, Watsonville, Cal

The Produce Markets

Los Angeles Markets

LOS ANGELES, April 10, 1907.

BUTTER

The butter quotation committee of the Los Angeles Produce Exchange lowered the official selling price of butter 5 cents per two-pound roll.

The decline was the direct result of the warmer weather and an increase in the supply, and it is expected by dealers that a further decrease will come shortly, especially if present weather conditions continue to exist. Butter making is just commencing in earnest throughout the valley country, so that unless the San Francisco market continues to hold up to present prices, which does not seem possible, a material increase in supplies should be felt within the near future.

Valley Creamery	52½
Coast, fy,	50
Cooking	20

Cheese

Only 3854 pounds of cheese arrived yesterday, all of which was Anchor. The market is very firm.

Cal. Young American, per lb.	21
California Anchor	20
Cal 3-lb. hand	21
Northern, fresh	19
Domestic Swiss	22
Imported Swiss	30

Eggs and Poultry

The egg market, though receipts yesterday were below the average for this time, denoted signs of weakness at the prevailing prices. No change was made, however, by the egg quotation committee, and none is expected, unless there is possibly a decline of 1 cent.

Eggs, local, per doz	20
Northern Candled	19
Fresh Eastern	18

The following are average prices which dealers pay to producers for live weight:

Hens, per lb.	16
Young Roosters, per lb	18
Fryers	22
Broilers, per lb.	24
Old Roosters	8
Turkeys	17
Geese	15@16
Ducks	15@16

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lbs.	7.75@8.00
Prime Steers.	5.50
Heifers	4½
alves, per lb	6
Sheep, ewes, per head	5.00@5.25
Lambs, per head	4.00
Wethers	5.50

Potatoes

Potatoes seemed firmer today. There was a good demand for fancy stock and one car sold on the Exchange. Dealers are bidding up more freely for fancy stock now than a week ago, for while receipts show there is a sufficient number of spuds arriving to meet consumption, so large a percentage of these are choice stock or are being sent to other nearby points that dealers will pay a small premium for strictly first-class goods.

Salinas	2.50
Sweets, Yellow, per sack	5.00
Colorado	2.05
Minnesota	2.00

Vegetables

Asparagus, lb	12@16
Beets, per doz	40@60
Bell Peppers, Green, lb	5
Cabbage, sack	1.25
Chili Peppers, Green	30
Chili, Dried, per lb.	13½
Cucumbers, per doz.	75@1.50
Cauliflower, per crate	3.00
Carrots, per doz.	40@50
Celery, per doz	30@50
Egg Plant, per lb	15
Garlic per lb	6
Green Onions, doz. bunches	25@30
Lettuce, per crate	1.00
New potatoes, per lb.	5@6
Lima Beans, per lb	7@8
Onions, Aust. Brown, sk	3.50
Parsnips, per doz	35@50
Rhubarb, per lb.	3
Radishes, per doz	15@20
String Beans, per lb	8@12
Sugar peas, per lb	7
Turnips, doz. bunches	40@50
Tomatoes, Mexican, crate	2.25
Wax Beans, per lb	16@18

Citrus Fruits

Lemons	2.00
Valencias	1.50@2.00
Navels	1.25@1.50
Grapefruit Seedless	2.00@2.50
Grapefruit seedlinggs	1.25@1.50

Fresh Fruits

The first dewberries of the season arrived this morning and sold for 35 cents per box. There were only a few crates of these and as yet prices are too high for demand to be strong. Strawberries were plentiful, of better quality and sold slightly lower than on the day previous. Quotatoins were 4@6c.

Apples, Bellefluer, per box	1.50
Apples, Ben Davis	1.50

Dried Fruits

Evap. Apples, fancy, per lb	9
Apricots	18
Peaches.	12
Pears	12@13
Prunes, fy,	5@8

Beans, Dried

Limas, No. 1, per cwt	4.75
Pink No. 1	3.00
Lady Washington	3.00
Small White	3.55
Black Eyes	5.50@6.00
Garvanzas	5.50@6.00
Lentils	12@15

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb. cans,	S
Light Amber	6½@7
Comb, wafer white, 1-lb. fms	15@16
Light Amber	14

Nuts

Almonds per lb.	19
Peanuts, Virginia	9
Peanuts California	6@7
Walnuts, No. 1 S. S.	14

Hay

Barley, No. 1	14.50 @16.00
Barley, No 2	11.00@12.00
Alfalfa, Local, per ton	15.00@16.00
Plain Oat Hay, No. 1	17.00@19.00
Plain Oat Hay No. 2.	9.00@15.00
Wheat No. 1	14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, new, per cwt.	1.50
Rolled Barley	1.35
Corn, per cwt	1.40
Cracked Corn	1.45
Feed Corn Meal	1.50
Shorts	1.35
Bran	1.20
Oil Cake Meal	2.50
Cocoanut Meal	1.40

San Francisco Markets

SAN FRANCISCO, April 9, 1907.

It looks as if there is to be no shortage of oranges in this market hereafter, now that the railway lines are again in good working order. Since Saturday there have been heavy arrivals, and today ten carloads were reported. The increased supply has not effected prices, as with warm weather there has been a much better demand. Strawberries were received from various sources. There were received from Los Angeles thirty crates of exceptionally fine quality and they sold quickly at $4.50@5.00 per crate, each crate containing 30 small baskets. Fancy red apples were firmer. Other fruits were unchanged, though the warm weather was causing a firmer tendency for choice lemons.

Butter.

California, ex. per lb	2
California, firsts	27½
California seconds	27
Packing Stock	23

Cheese

Fancy new cheese was ½c per lb lower for flats. There was no change in cheese.

New California, fancy	16
Cal. Young American, fancy	16½

Eggs and Poultry

Fresh Ranch Eggs	20½
Eggs, first, per doz.	19½
Hens, per doz., small	5.00@5.50
Hens, large	600@7.50
Young Roosters, large	7.00@9.00
Young Roosters, small	4.50@5.50
Old Roosters	4.00@4.50
Fryers, per doz	6.50@7.50
Broilers, per doz	4.00@6.50
Ducks, young	6.00@8.00
Geese; per pair	2.00@3.00
Turkeys, per lb	16@19

Live Stock

Steers. No. 1	9@9½
No. 1 Cows and Heifers	6½@7
Hogs, 80 to 130 lbs	8@8½
Hogs, 250 to 350 lbs.	8
Calves, per lb	5@5½
Lambs, yearlings	6½@8

Potatoes

Salinas Burbanks ctl.	1.65@2.10
Rivers	1.85@2.00
Sweet Potatoes, ctl	2.75@3.00

Vegetables

Asparagus	6@12
Cucumbers, per doz.	1.00@1.25
Chili Peppers, Green lb	15@25
Egg plant per box	3.00@3.50
Green Peas, per lb.	10@12
Squash, crates.	65@90

Onions, Red, per sack	75@1.00
Onions, Yellow	75@1.00
Peppers, Green Bell	25
Rhubarb, per box	50@1.00
Squash, crate	65@85
String beans	15@17
Tomatoes, Mexican	1.25@1.50

Citrus Fruits

Seven carloads of oranges arrived, also one of tangerines and grapefruit. Navel oranges of desirable sizes were meeting with a fairly good demand. Strictly fancy were in small supply and firm. The fancy lemons were plentiful but there were large offerings of common and poor.

Lemons	75@2.00
Navels	1.25@2.75
Seedlings	1.50
Grapefruit, seedlings	1.00@1.50
Grapefruit, seedless	2.00@3.00
Limes	3.00

Fresh Fruits

Apples were slow sale. Bananas continued very plentiful. Fifty crates of strawberries arrived from Los Angeles, and in much better condition than those previously received. They ranged in price from $3 to $4.50 per crate.

Apples, per box	1.00@2.00

Dried Fruits

Apples (evap.)	6@8½
Apricots, per lb	16@20
Figs, white	4@5
Prunes	3@4½
Peaches	10@12½
Raisins, seeded (1906)	3½@10
Thompson, unbleached	7½
Thompson, bleached	9@11

Beans and Seeds

Limas, No. 1	4.15@4.25
Pink	2.40@2.60
Large White	2.40@2.55
Small White	2.95@3.05
Black Eyes	5.00
Red Kidneys	3.75
Bayo	2.90@3.00

Hops

Desirable grades of California, 1906 crop, future delivery, 10@12 cents per lb, with occasional sales at 12½ cents.

Nuts

Almonds new	14@18
Peanuts, Viginia	6½
Peanuts, California	5½@6
W lnuts	15@16

Honey

Clear White Comb	16½
Amber	14@15
Extracted	5½@7

Hay

Alfala, local	8.00@12.00
Oat	15.00@18.00
Wheat. No 1	18.00@20.00
Wheat, No. 2	13.00@16.00

Grain

Wheat No. 1	1.32
Barley No. 1	1.23
Corn, small yellow	1.50@1.55
Corn, yellow	1.27@1.30
Oats, White	1.42@1.60
Oats, Red	1.30@1.60
Ground Barley, per ton	24.50@25.50
Bran per ton	21.50@22.50
Straw, per bale	45@75
Feed Corn Meal, per ton	31.00
Cracked Corn per ton	32.00
Oil Cake Meal, per ton	38.00
Cocoanut Cake, per ton	27.00
Calalfa Meal, per ton	21.00
Mealfalfa, per ton	21.00

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Malthoid is impervious to climate conditions, acids and alkalies.

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BUFF ORPINGTONS

Start with the best. I have a pen of Buffs of Commonwealth strain from prize-winners. Can spare a few eggs; $3 per 13 eggs; 90 percent fertility.

Mrs. N. F. Morse, Fullerton, Cal. R.F.D. 1

WHITE WYANDOTTES Hubbard Stock
Heavy-laying prize-winning strain. Eggs $2 for 15. Baby Chicks 20c each. Cannon Poultry Co.
2851 Morgan Ave., Los Angeles, Cal.
Take Glauson Ave. car to 29th St., walk 1 block west

Citrus Market

New York Market.

NEW YORK, April 8.—The market is lower on poor stock and very steady on good fruit. Ten cars sunk in the river today, two of them exchange cars. Weather unfavorable, snow, sleet and rain. Forty-three carloads of oranges and one of lemons sold.

NAVELS—	Average.
Sunflower ex fy C C U	3.30
Trophy C C U	2.95
Sunflower ex fy C C U	2.60
Anemone ex ch C C U	2.30
Purity fy E E Wilson	2.45
Conqueror Ind Ft Co	2.25
Highland ex fy Highland F G A	3.05
La Belle st Highland F G A	2.60
Sunshine	3.00
Trade Mark	2.85
Fountain ch F H Speich & Co	2.90
Santa Fe st F H Speich & Co	2.75
La Mesa ex fy Riv Ft Ex	3.25
Golden Rule ex ch Riv Ft Ex	3.40
Gold Buckle ex fy R H Ft Ex	2.75
Lochinvar ex ch R H Ft Ex	2.35
Blue Globe ex fy Riv Ft Ex	2.75
Red Globe ex ch Riv Ft Ex	2.80
Forget-me-not T C Ex Porterville	3.25
Ostrich ex fy S B Ft Ex	3.10
Winner ch S B Ft Ex	3.10
Queen Bee, ex ch Q C Ft Ex	2.80
Royal ex ch Q C Ft Ex	2.25
Iris ex fy D M Ft Ex	2.80
Blue Globe Thomp Im Riv Ft Ex	3.90
Blue Globe ex fy Riv Ft Ex	3.00
Alhambra ex ch S T Ft Ex	2.50
Don Quixote ch S T Ft Ex	2.50
Floral ex ch S B Ft Ex	2.60
Echo ch S T Ft Ex	2.75
Arroyo st S T Ft Ex	2.65
Floral ex ch S B Ft Ex	2.75
Red Globe ex ch Riv Ft Ex	2.55
Riverside st Riv Ft Ex	2.75
Red Shield ex ch A C G Ft Ex	2.45
Echo ch S T Ft Ex	2.80
Arroyo st S T Ft Ex	2.70
Quail ex ch O K Ft Ex	2.35
Parrot ex ch S T Ft Ex	2.35
Hawk st S A Fruit Ex	2.10
Searchlight st S S Ft Ex	2.35

NEW YORK, April 9.—The market continues very steady. Snowing hard all day. Twenty-two carloads of oranges, one of lemons, also ten sunken carloads, sold. Total. thirty-three carloads.

NAVELS—	Av
Pyramid o r Strachan Fruit Co	3.10
Titus Ranch xc S. Marino Gr. Pack	2.25
Tropical Queen Moulton & Gre	2.50
La France ch Kuns Ft. Co	2.45
Cyril ch Kuns Ft. Co	2.60
Vista Bonita fy Hemet L. & W. Co	3.15
Vista Bonita ch Hemet L. & W. Co	2.90
Flower fy Upland Dist	2.65
Flower st Upland Dist	2.45
Carnation xc Moulton & Gre	2.50
Orchard Thompson's imp N. O. Co	4.05
Standard Thompson's imp N. O. Co	3.70
Criterion or Penn Fruit Co	2.55
Wolf st Penn Fruit Co	2.85
Mayflower Richardson Fullerton	2.45
Pilgrim Richardson Fullerton	2.40
Golden Beauties	2.10
Blue Globe xfy Riv. Fruit Ex	3.05
Red Globe xc Riv. Fruit Ex	3.10
Riverside st Riv. Fruit Ex	2.65
Overland xfy R. H. Fruit Ex	3.15
Rebecca xc R. H. Fruit Ex	2.75
Red C xc Covina Fruit Ex	2.90
Cougar st Covina Fruit Ex	2.65
Golden Orange xfy Riv. Ft. Ex	3.45
Pointer xc A. C. G. Ft. Ex	2.10
Quail xc O. K. Fruit Ex	2.30
Coyote ch O. K. Fruit Ex	1.95
Puritan fy S. B. Fruit Ex	2.05
Stag xfy A. C. G. Fruit Ex	2.55
Pointer xc A. C. G. Fruit Ex	3.00
Hunter st A. C. G. Fruit Ex	3.10
Humming Bird o r Riv. Ft. Ex	2.95
Mt. Whitney fy T. C. Porterville	2.80
Valley ch T. C. Porterville	2.50
Solano o r Stewart Fruit Co	2.75
Warrior xc Stewart Fruit Co	2.95
SUNKEN CARS—	
Quail xc O. K. Fruit Ex	2.10
Iris xfy D. M. Fruit Ex	2.40
Violet xc D. M. Fruit Ex	2.30
Sunshine fy O. G. Cash A	3.20
Colonel xc O. G. Cash A	3.15
Golden Beauties	2.75
Wedding Bells	2.55
Peacock xc Worthley & Strong	2.00
Amethyst sd California C. U	2.20
Triumph California C. U	2.10
Lighthouse sd California C. U	2.30
Crafton xfy Crafton O. Gr. A	3.00
Mill Creek xc Crafton O. Gr. A	2.85
Auto st Tustin Packing Co	2.55
Warrior xc Stewart Fruit Co	2.85
Hawarden Thompsons imp Hawarden Citrus A	2.95
Arch ch Hawarden Citrus A	2.80
Rose xfy Redlands O. G. A	2.55
Clover xc Redlands O. G. A	2.30

CALIFORNIA CITRUS SHIPMENTS.

LOS ANGELES, April 9.—Monday: Oranges, 209 carloads. Total to date, 12,369 carloads of oranges and 1338 carloads of lemons. Same date last year, 15,384 carloads of oranges and 1378 carloads of lemons.

Prices Talk

For the "Old Trusty" Incubator

120-Egg Size	$14.00
160-Egg Size	17.00
240-Egg Size	20.00

"Old Trusty" Brooder Prices

100-Chick Size	$6.50
150-Chick Size	7.50
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On both Incubator and Brooder

Above prices good only during April.
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A Wonderful Hatcher

You can almost count your chickens before they hatch, if you use a "Sure Hatch." Our Show Window Hatch was no record breaker, but hatched ***94 strong chicks*** from ***102 fertile eggs.*** R. H. Criffield, St. David, Ariz., reports ***84 strong chicks*** from ***88 eggs,*** and all doing nicely with a Sure Hatch Brooder. We have many other reports equally as good from the 1907 ***"Sure Hatch."*** The "Sure Hatch" Brooders will raise from 85 to 100 per cent. of all strong chicks put into them. No cold corners to produce crowding, but an even temperature over the entire brooder, with plenty fresh air to produce strong, healthy chicks. Don't buy a brooder until you have seen the "Sure Hatch." You want the brooder that will raise the most chicks. See the "Sure Hatch" incubators and brooders in operation at 809 So. Main St. Send for Free Catalogue No. 25.

Anna P. Williams, General Agent
Flatiron Building 809 So. Main St. Los Angeles, Cal.

Large Chicks—

As well as little ones, eat ***A. C. W.*** It is so compounded that an 8-weeks chick will thrive as well on this splendid food as the little one-day-old fellows.

The question of ***proper, rational*** feeding of chicks, old or young, is solved by the A. C. W. The very best food for ***amateurs*** to use for their flocks—it can do no harm. No bowel trouble—no over-eating—if you feed A. C. W. Chick Food, put up only in sealed sacks, by

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The Agricultural Chemical Works
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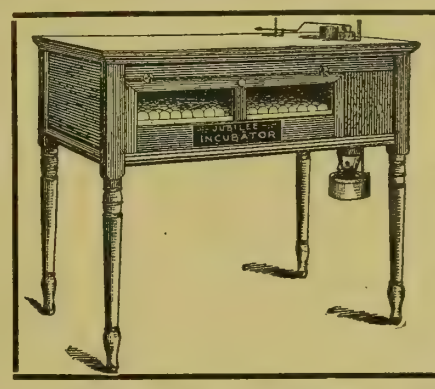

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"The Business Machines of the World."

Ask those who ought to know! Ask business poultrymen! They will tell you that for business results in Incubating and Brooding

The Jubilee Stands Supreme

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Jubilee Incubator Co., Sunnyvale, Cal.

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BUFF BLACK WHITE

Our yards are now mated for the season; containing winners of nearly 100 Prizes, Specials and Cups at California's leading shows. Our handsome Mating List and Catalog describes them all. Send for it today; it is free. Our birds are bred for utility and heavy egg production as well as beauty. All egg orders booked in rotation. Satisfaction guaranteed.

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PEN No. 1 contains four imported females and cockerel, all very large, strong black hackles and white bodies. Sure to breed winners. Eggs $5.00 per 15 straight.

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PEN No. 2 — Headed by First Prize Cock and winner of National Columbian Special, mated to six A1 females. Eggs $3.00 per 15 straight.

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EGGS Ringlet Barred Rocks $1.50 and $2.00 per sitting 15. Black Minorcas (Albert strain) $1.50, and $2.00 per sitting 15. Mammoth Pekin Ducks $1.00 and $1.50 per dozen.

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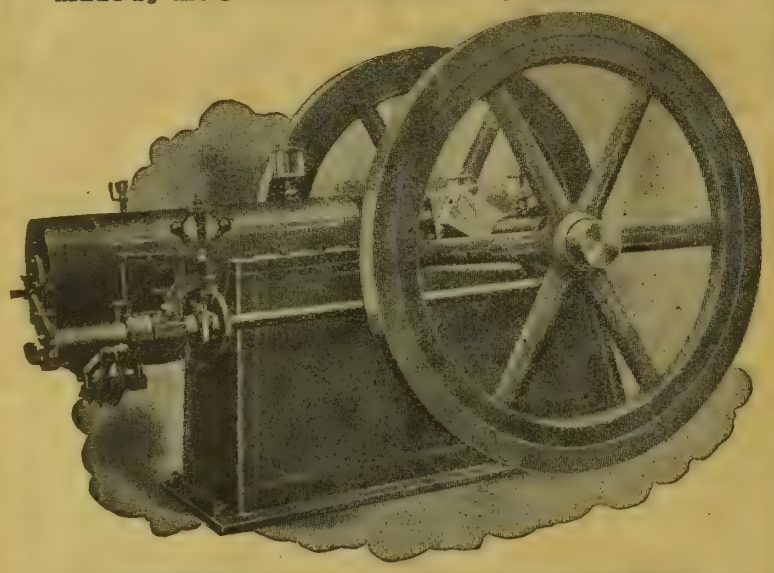

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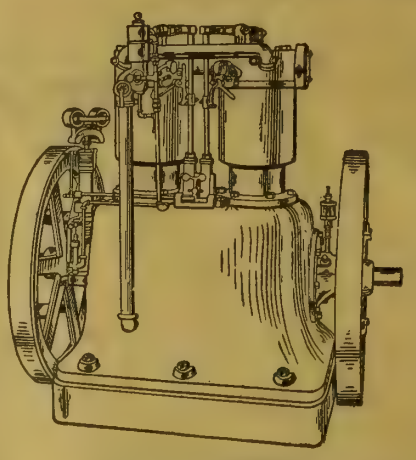

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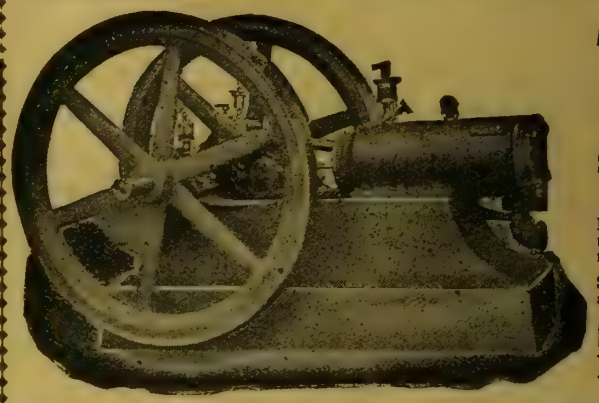

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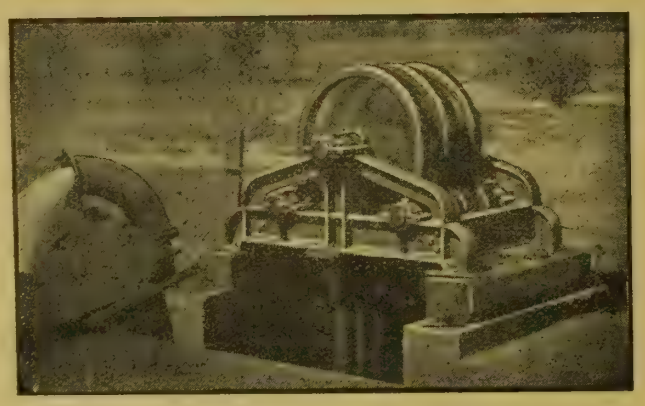

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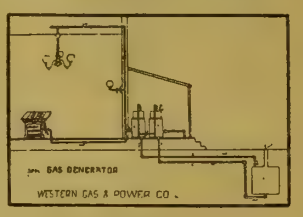

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AUTOMATIC SAFE ECONOMICAL.

Read what Mr. A. W. Foster, President of the California Northwestern Railway has about them:

Gentlemen:

Replying to yours of the 20th inst., I would state that the plant installed for me by the Western Gas and Power Company, on my Hopland Stock Farm, is giving entire satisfaction, and I cannot speak too highly of it. Yours truly, A. W. Foster.

Mr. Foster used an acetylene gas generator before we installed our Western.

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Has many points superior to any other engine.

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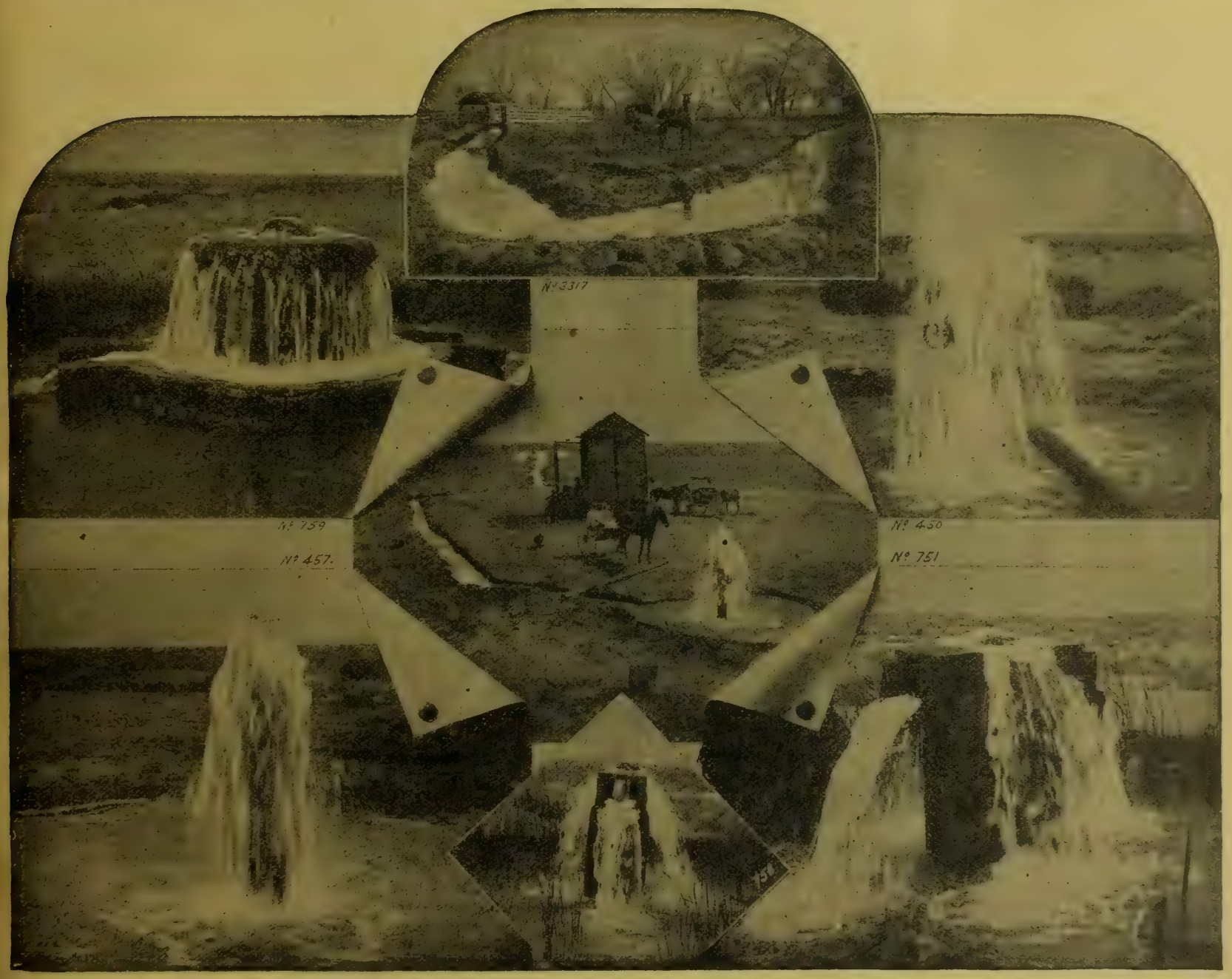
Special Irrigation Number

California Cultivator

Los Angeles April 18 1907 San Francisco

Underground Waters in California



SOME TIME ago considerable interest was excited by publications and public utterances to the effect that the amount of water which can be safely withdrawn from our underground basins is not unlimited, and that in some localities, at least, the limit of safe and conservative development had been reached.

These conclusions were based upon a careful study of conditions in the field, involving the examination of about 11,000 wells of all types, an accurate mapping of artesian areas past and present, and a study of such direct data as then existed upon the fluctuations of ground water levels, under the influence of varying annual rainfall on the one hand, and withdrawals of water by artesian or pumped wells, on the other.

Our ground waters are stored in subterranean reservoirs which are just as definite receptacles as the reservoirs built by man, but are vastly greater in extent. Like the man-made basin, they differ from one another in outline and depth and capacity. Unlike those which are made by engineering skill, we are usually unable to measure directly their dimensions and their capacity. They differ again, from the majority of artificial basins, in that they are filled to the level of the lowest point in their rim by loose sand and gravel and clay, which has been swept into them by the streams which flow to them or across them from the adjacent mountain masses.

Since these great gravel- and sand-filled valleys are merely underground basins, the water in them is subject to the same general laws that govern other reservoirs. If water enters them faster than it is withdrawn, they will overflow; if it is withdrawn from them faster than it enters them, the water level in them will fall. The source of supply is the rainfall, and the sources of drainage are the natural springs, and the wells, pumped and flowing, which supply cities, manufacturing plants and irrigating systems.

Of late, excessive rainfall has given a large supply of gravity water to irrigation systems, and so has greatly reduced the draughts on those auxilliary pumping plants which are used only when gravity waters are insufficient. It has, of course, resulted in a heavy run-off, and has therefore made available an unusually abundant supply of water for absorption by the sands and return to underground reservoirs. Clearly under these conditions our ground waters, if no more is withdrawn from the reservoirs than is required during average years, should show a marked improvement in conditions.

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Feed to Your Chicks

We Sell
COULSON'S SPECIAL
DRY CHICK FEED
THE BEST FEED FOR LITTLE CHICKS AND TURKEYS
COULSON POULTRY & STOCK FOOD CO PETALUMA, CAL.

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California Cultivator

Vol. XXVIII—No. 16 Los Angeles, California, Thursday, April 18, 1907 Subscription $1 a Year

Relation of Irrigation to Quantity and Quality of Fruits

A Brief Synopsis of a Bulletin on the Subject Written for the Department of Agriculture

By PROF. E. J. WICKSON

IN EARLIER publications the writer has endeavored to prepare useful statements of irrigation policies and methods from the point of view of the irrigator himself, securing the data by careful inquiry from the experience of several hundred irrigators in the Pacific Coast states.

A Thorough Enquiry.

It has seemed fitting to pursue the enquiry along the practical side one point further and draw from experienced irrigators their conclusions as to the effects of irrigation upon the commercial availability and value of fruits. The inquiry had the further object of securing practical suggestions for the assistance of beginners. Questions were sent to about 300 growers of irrigated fruits in the states of Idaho, Washington, Oregon and California and to a number of shippers, driers and canners who had used irrigated fruits in their trade or manufacture. The response from all the above-indicated interests was very satisfactory; a very free expression of belief and a very ample citation of experience were secured.

Quantity as Affected by Irrigation.

This is a matter which is really not in controversy in its general features, for there is a general disposition to credit irrigation with greatness of product; in fact this concession is often made with the view of denying its desirability—a question which will be discussed later.

There is, however, a question newly broached and now commanding much attention, viz., how far is irrigation desirable in regions of considerable rainfall, or, in other words, how much water can a fruit tree or vine use to the profit of its owner?

It is more clearly appearing each year, as Pacific Coast trees become older, larger, and with greater bearing capacity, that more water is desirable than earlier in the life of the plant and that in the same locality some water in addition to an average rainfall, and much water in addition to an occasionally scant rainfall, make for the strength and capacity of the tree, which are manifested in the aggregate weight of the product.

The recognition of this fact is carrying irrigation practice each year farther into the regions where the heaviest rainfall is received, which, on the annual rainfall figures alone, are called humid. Really, the districts in which the advantages of irrigation are now most warmly discussed are the districts where a few years ago freedom from irrigation was gloried in, and in such districts the most striking instances of the commercial benefits of irrigation are to be found.

The old contrast between the desert and the irrigated garden remains, of course, but it is accepted and admired in silence. The contrast which awakens most interest is that between the product of irrigation and that of rainfall where the latter was formerly held to yield all the water that could be desired. It requires a few more years of experience to multiply instances along this line, but they will be found ere long in great numbers in western Washington and Oregon and in northern California.

Irrigation Always Desirable.

It is very significant that there is such unanimity in favor of irrigation, although many of the growers are situated in districts having considerable rainfall.

Irrigation by Checks

It is notable that, in fact, no reports denying the efficiency of irrigation in increasing the product of trees and vines were received, although there are, manifestly, conditions under which irrigation is not essential to the fullest service of the fruiting plants and therefore hardly worth providing.

Correspondents, however, did not consider this point worth making in their reports. This clearly indicates a change in the public mind with respect to irrigation in fruit growing and betokens full recognition of its importance. A few years ago objections to irrigation as either unnecessary or undesirable, or both, would have been urged by scores of correspondents when offered such an opportunity as this enquiry placed before them.

Regularity of Bearing.

This subject has only recently risen to its proper place in the discussion of fruit-growing policies on the Pacific Coast. The declaration of the principle on which regular production rests that the fruiting plant requires moisture for two distinct functions during its active season is not new, but the appreciation of its truth and practical bearings is recent.

It has been forced upon the attention by investigations at the Wisconsin Experiment Station, showing that the tree, in certain cases at least, was devoting energy to the development of the fruit buds for the following year and carrying the burden of the current crop at the same time. It was known that the tree forms fruit buds in the later months of growth after its fruit may have matured, but the announcement of the earlier undertaking of this function strongly emphasizes the necessity of ample moisture supply, not alone for the current crop but for the succeeding crop.

For this reason an effort was made in this enquiry to secure facts from wide observation as to the relation of irrigation to regularity of bearing. Formerly recourse was had to pruning to lessen amount of bearing wood and reduce the burden of the tree after the fruit had set. The newer idea is to supply water to enable the tree to carry more fruit to satisfactory size and at the same time to prepare for the following year. In fact the relation of adequate moisture to the strength and effectiveness of the fruit bud has come to be widely appreciated.

Irrigation Promotes Regularity.

The reports present a vast preponderance of observation and experience that irrigation does promote regular annual fruit bearing.

There are a few instances in which the opposite view is expressed and others in which the observer is in doubt.

In some cases probably the opposing observation rests on experience in situations where trees are not helped in regularity of bearing by irrigation because they really have a greater amount of available moisture, though the rainfall may not be greater than is available on adjacent places where the contrary observation is made. This is strikingly true in the case of Whittier, Los Angeles County, Cal., where Mr. Bequette reports regular bearing without irrigation.

Whittier is a low-lying region with great depth of soil and ground water within reach of deep-rooting trees. In such a situation irrigation is naturally less likely to be profitable, because the trees are supplied by the underground movement of water and enjoy more than their share of the scant rainfall of the district. There may be similar conditions to explain the conclusions of the few others who hold a negative view.

Qualities and Commercial Characters.

The desirability of irrigated fruits, for qualities

Continued on Page 424

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P. S.—See Article in Cultivator on Page 550, issue of December 6th.

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Deciduous Fruit Culture

By J. W. MILLS

ORCHARD IRRIGATION.

IT WAS not until recent years that the deciduous fruit growers of the northern and central parts of the state discovered the importance of employing irrigation to make a better grade of fruit. Sections that were producing immense quantities of fine fruit could have improved their product by irrigation, but they were doing well enough. They thought that irrigation would lower the quality of the fruit. This idea perhaps grew out of the results obtained by those who had tried irrigation without giving the subject proper thought and attention. It was found that irrigated fruit was soft and with poor flavor.

Ignorant on Irrigation.

The trouble was, irrigation was done at the wrong time. Nevertheless, this objection staid with the subject for many years, and it is still counted against irrigation by some growers. At the same time, fruit grown in damp soil, near the rivers, brings the most money and has the finest quality. The difference is, in the first case, the task is engineered by a man, and in some cases is irregularly done.

In the latter case nature did the work regularly and evenly. Peach orchards in such situations in the Sacramento valley have in recent years brought over $1000 per acre yearly. This is under natural irrigation. Artificial irrigation on good soil can be made to nearly, if not actually, equal it. The point to keep in mind is, that a tree will do its best when supplied with a certain amount of water. This is a fact beyond dispute.

Irrigate Right.

It does make a certain amount of difference whether the trees gets it naturally or artificially, but the water can be supplied the latter way so as to nearly imitate the natural supply. It should make little difference if it is so done, and such is a fact. This is a lengthy argument to present simple facts, but there has always been more or less argument against irrigating deciduous fruits.

The application of water in furrows is the best method for most, if not all, such fruits. The roots of this class of fruit trees run deeper than those of citrus trees and consequently they will not need irrigation so often, but they will require a longer run of water to give the best results.

When to Irrigate.

Deciduous fruits that are irrigated near to the time of ripening are apt to be too watery and of poor flavor. It is this feature that has brought objections to irrigation. This feature will always have to be settled by the individual grower, as soils differ so that no set rule can be given. Men who have given attention to the details of this part of fruit growing claim that with irrigation they improve the quality and increase the quantity.

The general rule to follow is to keep the soil well-saturated with moisture while the fruit is maturing and making size, but before the sugar forming or ripening period commences withhold the water, or stop irrigation long enough before this period, to allow the surplus water to become exhausted. This is what takes place in the river-bottom soils that are naturally subirrigated.

As the season advances, the water table lowers and through the absorption of the water by the roots and by evaporation, the amount of water in the soil gradually becomes less. With this comes the uniformity of conditions that produce even and harmonious results that tell so strikingly on all kinds of vegetation; fruit trees, and orange trees especially.

Irrigating Walnuts.

Walnut trees require a great deal of water, and while their roots penetrate deeply and wide, the furrow system of irrigation is seldom employed. Here the land is usually heavy and close in texture, and well shaded in old groves.

This prevents rapid evaporation, but still, more is lost than would be by the furrow system. It is important not to injure the roots of walnut trees and for this reason flooding has an advantage.

Irrigation on the Desert.

Irrigation in the Imperial country is wholly by the flooding system, except in the case of vineyards or orchards. Here the furrow system is the most desirable on account of the convenience and small amount of labor.

Melons, of course, cannot be flooded, but all grain crops are, as is the land before preparation. The presence of alkali, the level land and the cheapness of water favor the flooding plan. Cantaloupes are often irrigated from both ends of the furrows; the land being practically level admits of this practice.

Flooding several times before planting field crops, and especially alfalfa, is the only practical way of handling land under conditions there existing. Preparing land with the furrow system brings the salts to the surface along the banks, and increases the quantity at the surface. Frequent irrigations before planting, with cultivation as soon after turning the water off as possible, drives the salt down, and when the crops cover the surface, followed by irrigation, evaporation is reduced materially and the salts remain distributed at lower depths.

IRRIGATION VALUE UNQUESTIONED.

There is one thing we must keep more prominently in mind; that is, that successful, practical irrigation is not so easy a thing to learn and practice as many suppose. The blundering unsuccess of untrained beginners does more to retard the progress of irrigation in new districts than all things else.

I visited a semi-arid section in Nebraska where a few years before a much-needed irrigation plant and plenty of cheap water had been secured. It had proved so unsatisfactory as to discourage not only those immediately interested but the whole region as to the practicability of successful irrigation. I found the condition easily explained by the utter carelessness of application and management of water, while with practical direction it might have been made of vast benefit locally and a useful object lesson for the whole region.

I fully understand that irrigation of deciduous fruits may be mismanaged or overdone, as with citrus fruits, but I cannot understand at this late day how there can be any question as to the great value of irrigation intelligently applied to deciduous fruits, both as to quality and quantity of product. —J. H. Reed.

Trees can be drowned by too much water or may die from too little of it.

DECIDUOUS ORCHARDS.

Since it is important that trees be properly irrigated from the first, it will be well to begin the discussion of orchard irrigation with the setting of the trees. During the first year, all varieties of fruit trees, whether deciduous or citrus, need to be treated in about the same manner.

Before the trees are set, furrows are run near the lines of the tree rows for the early irrigations. Usually water is run through the furrows before the trees are set, and as soon thereafter as practicable. The furrows should be cultivated up within a month, and fresh ones made for each subsequent irrigation. The young orchard should be irrigated only along the tree rows and the soil should be kept moist to a depth of several feet. This will induce the trees to send their roots down deeply, instead of out laterally near the surface. Deep irrigation followed by deep cultivation will prevent the growth of roots near the surface. Since much depends upon the treatment of the orchard during its early growth, it pays to give the trees special attention the first season.

As the trees get older they will need less frequent irrigation during the growing period, and more of the water may be applied during winter. After they are four or five years old at least three-fourths of the water needed may be applied to deciduous trees during January, February and March. The remainder needed may be applied when water is most abundant during summer. The furrows do not need to be cultivated up after each winter irrigation; but they should be renewed as often as once a month, if a green manuring crop is not grown in the orchard. Such a crop is an excellent check to the flow of the irrigating water, as well as a benefit otherwise. When the winter irrigation is finished, the soil should be thoroughly cultivated to a depth of eight to twelve inches, and the surface be permitted to remain dry until the time of the summer rains.

IRRIGATED FRUITS AT FAIRS.

The pomological fairs within the irrigated regions and the great expositions at home and abroad during the last quarter of a century have afforded an opportunity for contrasting displays of irrigated and non-irrigated fruits.

Irrigated fruit is conceded to be rich in show features. Its size and beauty have always commanded admiration, and its superior attractiveness has been sufficiently demonstrated by the fact that in earlier expositions in California, and possibly elsewhere also, it was often set apart in a class by itself, so that the competition of non-irrigated fruit with it for the same awards might be avoided.

A question was, however, addressed to growers as to their experience with irrigated and non-irrigated fruits at the fairs, in the hope that some instructive contrasts might be brought to light. The answers received do not, however, attain such ends, although they do constitute an interesting record of experience, and in some cases shed a unique light on the durability of irrigated fruits in long shipment and during the trying exposure on the show plates.

There has perhaps been no clearer demonstration of these facts than the award at the Paris Exposition of 1900 to the apples grown with irrigation in Idaho. The same behavior of irrigated fruits has been manifested at all American expositions since the Centennial at Philadelphia in 1876, which was the first great opportunity for the irrigated fruits from California.

IRRIGATED GRAPES.

The first season after setting, grape vines need frequent irrigation throughout the season, to enable them to become well established. Two irrigations a month will be beneficial in porous soils, and one irrigation per month should be given in most other soils. The second season, the vines will do well with less frequent irrigation.

During later years, the greater part of the water needed to produce a crop may be applied during the winter. Water to the depth of two feet may be applied to advantage in most soils during this period. When the blossoms begin to open, water should be withheld until the young fruit is about the size of peas. One or two thorough summer irrigations will be ample to produce a good crop. The total amount needed during the year is not over three feet.

IRRIGATION POINTERS.

Too much water on or near the surface will injure fruit trees. Some orchards where water is plentiful are being ruined by too much of it, even in the mountains where natural drainage is usually all that could be desired. The trees are sickly and the fruit of little value.

The things to know are when to irrigate and how much. Just enough at the right time insures the best possible result, but some growers seem to be unable to learn this.

Where hardpan is near the surface, care must be taken or the tree or vine is very likely to be injured if much water is applied in warm weather.

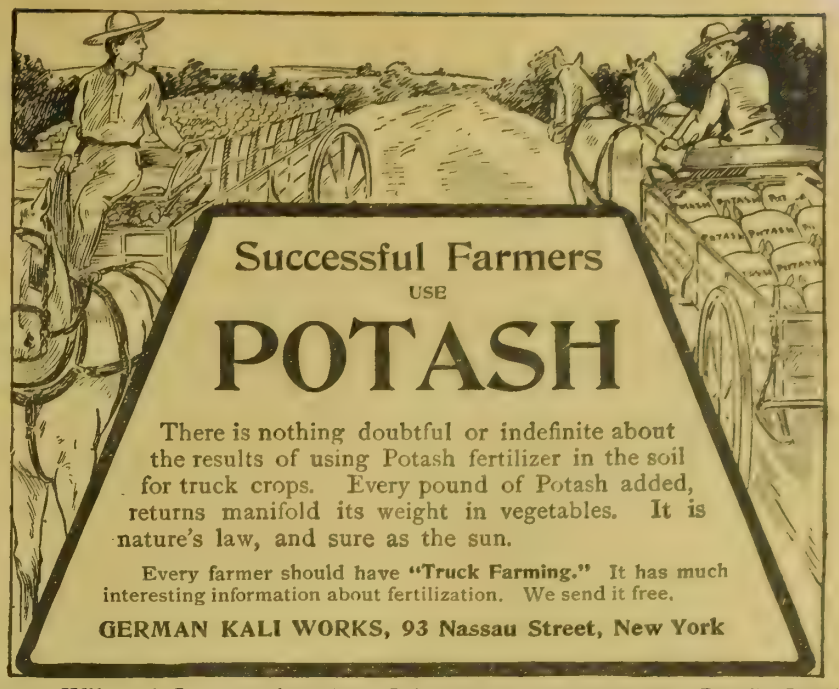
If too much water is used the fruit will drop and the trees show a sickly appearance in the middle of the spring. Moderate irrigation will not do this.

Where water is allowed to stand or there is insufficient drainage the leaves turn yellow, and if the trees are not looked to they are apt to die.

Deciduous fruit trees are injured by too much water and by allowing it to run around the body of the tree.

Fruit trees are often injured by too much irrigation—in fact, many are killed by it. It also spoils the fruit.

Too much water remaining too long around the stems of low-set orange trees causes root rot or gum disease.



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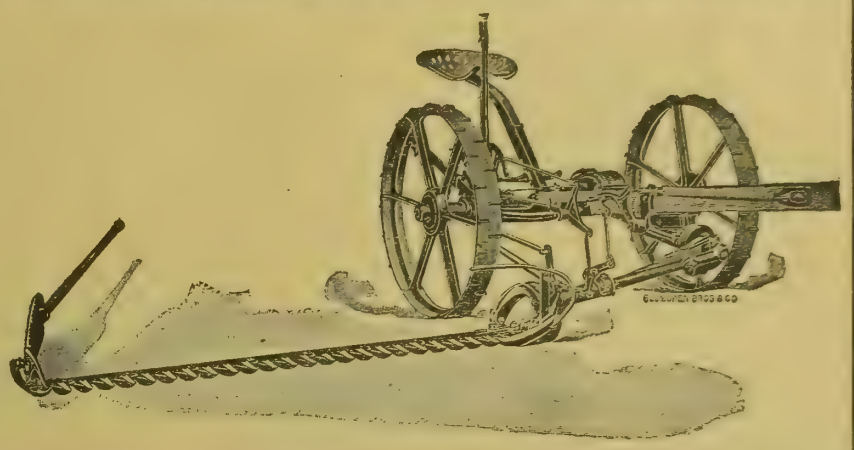

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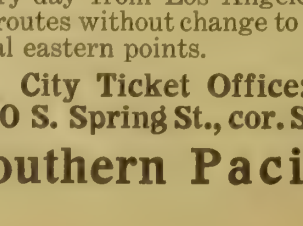

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With the Citrus Growers

By J. W. MILLS

CITRUS IRRIGATION.

WITH the beginning of citrus culture in Southern California, began irrigation of orchards on a commercial scale and an attempt at scientific methods. The configuration of the land necessitated different methods of applying water, but the old method of flooding in checks was practiced whenever it was possible.

The Check System.

This manner of applying water was considered the best, for it had the appearance of doing good work, and it did when the soil was new and had never been irrigated before.

The orchard was laid off into blocks with a tree in the center of each, every tier of these blocks being connected with a furrow running from the upper to the lower end. A big head of water was turned on, filling the lowest square first and then turned into the one above, and so on till the whole string was filled to the tops of the ridges on the lower sides. This was repeated on each tier of plots till the whole orchard was flooded.

It will be seen that this method entails a great deal of labor in ridging up the blocks and working them down again after the land had dried out. There were always other undesirable features, the chief one being the great loss of water by evaporation while the land was drying out sufficiently to be cultivated.

Another serious objection was the irregular drying out due to varying porosity of the soil. Sandy spots in the soil would take the water faster than those with considerable clay, and as a consequence the former would be too dry before the latter was fit to cultivate. Nevertheless, the flooding system, while it has disappeared for good from most districts, is the most desirable in those orchards where the soil is a loose gravel and sand.

When the water is run in a furrow over such land, the water goes straight down and does very little side percolation. Furrow irrigation leaves a large amount of surface and lower soil, that contains feeding roots, absolutely dry. The flooding system covers the whole surface and is ready for cultivation almost immediately after the water is turned off.

Orchards which are mostly heavy soil, but with sandy or gravelly spots, or streaks in them, can be most economically irrigated with the furrows in the main part and blocks in the sandy places. It will require extra work to prepare the land, but it is a fact that the poor spots in a grove are usually where the soil is gravelly, but the main reason why the trees are smaller in such places, is that they do not get the irrigation properly. Such places, if they had a flooding between regular irrigations would be greatly improved. This could in many cases be easily done and the furrow system adhered to at the time of regular irrigations.

The harm that comes from flooding large trees, seems to be due to the nature of the tree. In its natural habitat, the weather is favorable to these conditions when such wettings have taken place, but in an arid climate and in very hot weather, it seems to have a deleterious effect on heavy soils.

The Furrow System.

There are many advantages with the furrow system. It is the cheapest and most convenient method of applying water in a grove. When properly managed, as much water can be put into the soil and practically all of it saved, as by the check system.

By making the furrows not less than ten inches deep by running the plow both ways, a ridge is formed on both sides, which can be dragged into the furrows within a few hours after irrigation ceases. This makes a dry mulch on top, which shuts off evaporation almost entirely, at once.

The action of water on different soils is different in each case. In heavy soils the side percolation is greater in proportion to the depth than it is in lighter soils.

This is due to certain principles in physics that we will not discuss here. It is known to be true to the ordinary observer. This being true, it is certain that different distances between the furrows could be profitably made on different kinds of soils, but the practical points must be adhered to rather than following theoretical principles. It is for this reason that nearly uniform methods are employed with the furrow system even where the soils are quite different.

In young orchards with wide variation of soils, different distances between furrows, or put in a different way, a different number of furrows to a space, are wholly practical. When the trees cover a third or half of the space, these considerations are left out because the spaces will not permit.

The Subsoiler.

The subsoiler at one time played an important part in irrigation of citrus trees in heavy soils.

There are perhaps hundreds of orchards which got into such shape that it was impossible to get the water down into the soil deep enough to last from one irrigation to another when in former years, the trees of practically the same size could go for a much longer period.

This was in most cases laid to "plow sole." Some of the most careful observers claim that it was due to the action of irrigation water on certain soils. The trouble disappeared to a certain degree during seasons of moderate rainfall and improved much more after a season of abundant rainfall.

It became a common practice with many growers to run the subsoiler between the rows in the direction of the irrigation furrows. The water would follow in these subterranean grooves and come out at the other end of the grove without wetting the top of the ground between. This pleased some growers for a time, but they soon discovered that the water was not where they wanted it and the trees suffered.

The roots were near the surface and the water was far below and refused to come up in sufficient quantities to supply the wants of the trees. Those who saw the point soon abandoned this method and adopted the deep furrows, and not suffer seriously, but we are told that some groves which were subjected to this treatment a little too long, never have recovered their former vigor and bearing capacity. There is perhaps no method that will ever supplant the deep furrow system for the greatest varieties of soils. Sub-irrigation has proved a failure in every case where it has been tested.

California Horticulturally

By JOHN ISAAC, Sacramento, California

IRRIGATION IN THE SACRAMENTO VALLEY,

IN NO part of the state is more attention being paid to the great problem of irrigation than in the Sacramento valley.

Irrigation Universal.

In the southern San Joaquin, irrigation has long since become a fixed fact, and in Kern, Tulare, Kings and Fresno counties it has been reduced to a science and is depended upon wholly for crops. This is also true, in a less important degree, of the northern counties of the San Joaquin, and here there are some very extensive and important irrigation works; but Sacramento valley has been slow in awakening to the great importance of the work and the wealth which follows in the train of irrigation.

It is true that there has been a great deal done along these lines from the earliest period of the American occupation, and that some great irrigation enterprises have been undertaken, but until a comparatively recent period, this work has been carried on in a desultory and spiritless manner, and some of the greatest irrigation enterprises were strenuously fought by those who would have most benefited by their accomplishment.

But Sacramento valley has awakened to a new era, and there are now under way and projected some of the greatest irrigation works in the state. This has been brought about, too, in spite of the people themselves and has been forced upon them by fate.

The Unirrigated Era.

In the early days of California, when the agricultural succeeded the mining period, it was discovered that grain could be grown on what had been regarded as desert land, and not only grown, but that such land yielded enormous returns and the crops brought big prices.

Those who had gone into wheat growing found themselves getting rich and they added to their domains, until vast areas were absorbed by individual wheat farmers, and the Sacramento valley became one great wheat field.

The small settler was discouraged and driven out, and as the wheat area increased, population decreased. It was this desire to drive out the small settler which prevented irrigation development in the Sacramento valley, and which has kept back this most fertile section of California. But, it is said that time evens all things, and the wheat lords overreached themselves.

Constant cropping, shiftless cultivation and a steady drain on the soil with no returns given thereto, gradually reduced the output; prices for wheat decreased at the same time, and the owner of vast areas of wheat and found himself running behind; his land did not pay.

A Glorious Awakening.

This has led to the cutting up of these great areas into small holdings, and small holdings are not profitable without intense cultivation and for this irrigation is a necessity. Here is the cause of Sacramento's awakening.

We have an enormous stretch of the most fertile land on earth, a climate unsurpassed, soil which will produce anything that grows, and we have seven months of no rainfall. To become profitable, therefore, this land must be irrigated.

With the soil and the climate there is also the water, and the Sacramento valley has the greatest water shed on the Pacific coast, with an abundant supply to irrigate every foot of arable land therein.

The Era of Irrigation.

The Sacramento valley has just commenced its new era of development in this direction and a great incentive to its advancement is being given by the work now being performed by the federal government, which consists of a complete exploration of the entire drainage basin of the Sacramento river for the purpose of locating suitable reservoir sites.

Where such sites have been found their capacities have been determined by surveys and the cost of necessary dams for impounding the water has been estimated. The flow of the various streams running into the valley has been recorded and the amount of water available for irrigating is known to an exactitude.

It is only a question of time, (and with the present influx of population into our state, of a short time) before these reservoirs will be built and canals from them will lead to every foot of available land in the Sacramento valley, which will be watered by the stored up waters of the winter without at all interfering with the navigable river.

Federal Aid to Irrigation.

The building of these reservoirs and the conservation of the winter rainfall will have a doubly beneficial effect on the great valley. At the present time, a very large part of the rainfall in the valley is drained off through its great waterway as soon as it falls.

The river has been shoaled by the constant running into it of the debris from the mines and the natural washings from the mountains for many years past and it is therefore incapable of carrying off the enormous volume of storm water which pours into it from the great watershed which it drains; the result is, destructive floods nearly every year, which destroy infinitely more property than would be the cost of building the dams and checking the flood waters, while at the same time holding them back for use in the season of shortage.

Sacramento valley has altogether too much water at some seasons and not enough at others, and the problem for solution, and which is being rapidly solved, is how to properly distribute it so that it will accomplish all possible good and be prevented from doing great harm as at the present time.

Extent of Reclamation Work.

J. B. Lippincott, Supervising Engineer for the United States Reclamation Service in California, estimates the irrigable land which can be reclaimed by this service at 2,000,000 acres.

It is estimated that many thousands of acres can be irrigated from Puta Creek; 80,000 acres from Cache Creek, and 40,000 acres from Stony Creek. The water from these streams should be used to irrigate the higher valley lands near the points where these streams leave the foothills.

The remainder of the land on the west side of the valley would have to be irrigated by canals taking water from the Sacramento river. There are approximately 1,047,000 acres of land on the west side of the Sacramento valley below Red Bluff, above the overflow line of the flood of 1904.

A Wonderful Transformation.

It is a safe assertion that a great part of the present wealth of the Sacramento valley and a very greater part of its future is, and will be, due to irrigation.

Mining has taken a second place, wheat growing is no longer profitable, while fruit and summer crops are increasing in importance. It is largely upon its fruit and fruit products, upon its raisins and wines that the prosperity of this section will depend, and these will depend for their success upon irrigation.

This will mean more intense cultivation, the cutting up of the large tracts, a denser population, more taxable property, homes for a million more people than there are now in our state and a season of unexampled prosperity.

The Great Value of Irrigation.

The very rapid growth of the irrigated sections of California, their remarkable increase in wealth and population over the non-irrigated sections is a strong argument in favor of the artificial application of water to land.

Several years ago a committee of the United States Senate on the irrigation and reclamation of the arid lands, made a report on this subject in which a comparison was drawn of the growth of the different sections of the state

The state was divided by this committee into groups of counties enriched by irrigation, increasing in irrigation activity, and foothill counties partly irrigated. The former included thirteen counties dependent upon irrigation, and in these the taxable property increased in ten years $248,405,414.

In the second group, "counties increasing in irrigation activity," eleven were named with an increase of $51,544,991.

The third group consisted of eight foothill counties, partially irrigated and showed an increase of $12,657,874. Nearly one-half of the total increase of the value of taxable property of the whole state was made in the thirteen irrigated counties, and the same proportion will hold good at the present time.

It is in Southern California that irrigation has reached its greatest perfection and it is here that we find the greatest prosperity in the state, but the northern portion of the state is rapidly falling in line and it will not be long before it, too, will bourgeon and bear under the magic influence of water applied to the most fertile of soils in the season of greatest growth.

NITRATE DEPOSITS.

There is a generally prevalent idea that it is an admitted fact that the Chilian Nitrate deposits will, at the present rate of working, be exhausted in the near future, probably within about twenty years. This estimate is based upon surveys and calculations made some ten or fifteen years ago, before a complete examination of the pampas outside the province of Tarapaca had been undertaken. In recent years vast deposits have been discovered and surveyed in the districts of Antofagasta, Taltal and Tocopilli, and according to the latest official estimates the store of "caliche" now known to exist and to be workable will suffice to meet all requirements of consumption during the present century.—British Agricultural Press.

Both trees and vines may be "scalded" by allowing water to stand too long in hot weather.

Orchards have been injured by too much irigation, causing the roots to scald.

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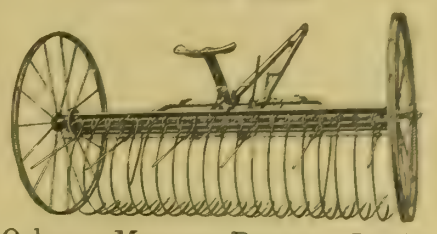

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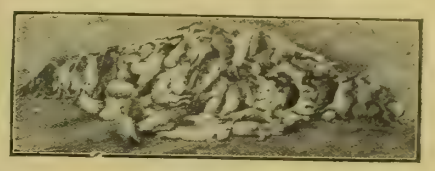

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DAIRYING ON IRRIGATED LAND.

THE dairy is a success on irrigated land, for the constantly green feed keeps the cows producing milk steadily. The amount of money made depends today very little on the size of the town supplied, for the difficulty of transporting milk has been overcome by the use of the separator. Cream is a high-priced, concentrated product that can be shipped and arrive in reasonably good condition several hundred miles.

Small Dairies.

The small dairy on forty acres of irrigated land, run by the owner, makes more money per cow than the larger dairy.

The expense of hiring men is saved as well as their carelessness and waste. The children milking the cows are kinder and more watchful. These small dairies are wonderfully profitable when the amount of capital invested is taken into account.

Large Dairies.

The men that run large dairies for money investment usually combine the raising of registered stock with it.

They employ or try to employ a good head man to push the sale of breeding stock as well as the sale of milk and butter.

Success of a Small Dairyman.

On a forty-acre piece of irrigated alfalfa a renter had twenty common cows twenty years ago. He hauled the milk to town himself and served his customers. His wife helped him loyally and as his means increased, the cows increased, and to his credit the wife's labor decreased, until finally she had a pleasant home in town.

A year ago he sold the cows and the milk business. The herd then numbered about one hundred head and had been graded up to almost pure bred Holsteins and Jerseys. The profits from those cows were carefully invested and today an 80-acre orange grove and a 60-acre vineyard are part of his property.

Two children have received a liberal education. A good home has been maintained with more than ordinary comforts of life. Today this man is considered to be worth $150,000, all starting from twenty scrub cows.

Back to the Dairy.

There is no surer way of building up a competence than from a dairy nerd. The money comes in each month, the losses are small, and at any time the cows can be sold for cash.

There are some funny people around in this world. There was an old father that raised a large family of boys on his dairy; when the father died the boys sold the cows and each had a snug little sum of money to start with in some "high-toned" business.

In five years time they were buying cows on time; in five more again sold out to be real estate men; today they came for more cows as they are again broke. Dairying they consider beneath them and yet all the money they or their father ever made was "cow money."

First Alfalfa Butter.

The struggles I underwent twenty-one years ago to make good butter on alfalfa will always be remembered as the first hard work of my lifetime. It was harder than studying Greek, that was mental, this was both mental and physical toil.

Then came the struggle to convince people that the butter was as good as the Coast butter; yet it came in time and the result has been that butter has not been scarce nor has it ever reached the fabulous prices it used to command since the recognition of alfalfa butter.

The Coast butter was made during the flush of grass, then the cows went dry slowly, and the price of butter rose rapidly. The irrigated alfalfa fields now supply green food all the year and the price of butter is more steady.

Old Times.

In the old days in the flush of the spring time the farmers wives made butter everywhere.

It was duly gathered in by the storekeeper, sent to San Francisco and renovated, packed into tubs and shipped to the mining and lumber camps. It gave the wife a little money, and alfalfa butter a bad name.

Irrigated Lands.

The milk cow on the irrigated land milks for three hundred and twenty to three hundred and forty days of the year, instead of one hundred and fifty as of old. This has made a call for better cows, for those that would hold up in their milk for a long period.

The importation of improved stock has increased rapidly in late years; today the scrub sire is not seen. It is always an animal of good blood that is used. Half as many cows with improved blood will produce as much as the old scrubs did.

Alfalfa.

Alfalfa has always been considered as a plant suitable for irrigation, yet there are subirrigated lands, with an underlying basis of hardpan, that yield well without irrigation, the long tap roots reaching down to water.

These fields are held at high prices, nor it means all the advantages of irrigation without the expense. The irrigation companies claim their charges for water all the same, as they rightly say if all the water was out of the ditches there would be no subirrigation.

Irrigation.

There is land that is sold as irrigated that lies on ditches that carry no water after July. These limit the dairyman's crops of sorghum and corn and do not permit him to stock up to full capacity of a cow to the acre.

There are many men now supplimenting this lack of water by using wells. It pays to pump water from shallow wells for two irrigations of alfalfa. We put in wells during the dry years for the young vineyards, and pumped from them for a number of years, then they were idle for four years, then again in use, now are idle, yet they are there and with one of the gasoline engines we are safe from ever having a water famine.

Abuse of Water.

Irrigation is abused by using an excess of water. The new-comers into the state have to be trained to use less water and more cultivation. Winter saturation of the land with water and summer cultivation are the cheaper ways of handling the soil.

Saturate the land before corn planting time, then plow, harrow and cultivate until the soil is fine and mel-

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low. Then furrow out four feet apart and plant the corn in the bottom of the furrow six inches below the level of the soil. Keep the cultivator moving to hold the moisture and when the corn is nigh enough, begin to crowd back the loose earth in the furrows around the corn.

When the corn is three feet high the furrows should be level. The corn by this filling in has been made a deep-rooted instead of a shallow-rooted plant, and the roots are down into the stored up moisture. When the tassels come, if the corn can be irrigated, plow out a furrow between every other row, and run the water in slowly to soak down deeply. Then as soon as possible cultivate. A corn crop grown in this way costs little and will give fifteen to twenty-five tons to the acre of silage. The time from planting to cutting is one hundred to one hundred and twenty days, according to the variety planted.

Over-irrigation.

Alfalfa suffers from over-irrigation much of the time. Watch carefully the growing crop, and if the crops on the levees of the checks show more than the intervals, then the crop has been over-irrigated. The cost of irrigating is in the labor, for in the alfalfa counties, the ditch companies receive 62½ cents to $2.00 an acre for water. It is paid whether the water is used or not.

The best time to irrigate is about ten days before the crop is cut. In the hottest weather, if the irrigation is done by moonlight or early in the morning, there is no danger of scalding. When alfalfa is not pastured it should be ready to cut every forty to forty-five days during the summer.

When it is allowed to stand too long a coarse, woody hay is produced, without lower leaves. The value is less for feeding and considerable weight is lost. Be prompt in making the hay and prompt in curing and removing it from the field. The next crop is already growing and it will not help it to have the hay cocks standing on it.

Beets for Food.

A change of food is valuable in feeding cows or pigs; a few acres in beets come in acceptably in the fall. They require more labor than corn to grow, yet beets and pumpkins feed well to both cows and pigs.

The dairy cow and irrigated land belong together; with forty acres of alfalfa a man with a family can live well and lay up a little money. Twenty-five cows, two horses, one hundred pigs, 250 chickens, with five acres in orchard and five acres of vineyard is the ideal little ranch of the working man. He can do most of the work himself and make a comfortable home.

Value of Water.

There are alfalfa lands held as investments by men living in San Francisco. They sell the hay for the southern market and claim that they often pay for the land and its improvements in three years' time, sometimes, in two years. Water was all the thirsty desert needed to become profitable for crops the dairyman grows for his cows, green crops to increase the milk flow, not water from the pump in the milk, but water into the green feed to make the milk. Irrigated land is good and desirable, but irrigated milk is "too thin," and the vendor is on his road to jail.

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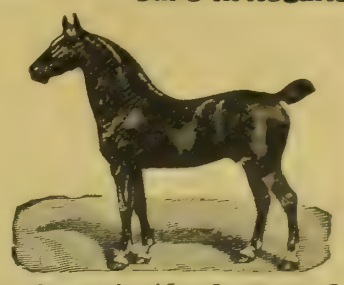

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There are no strings to this offer. Just send us your name, your postoffice address, the freight station to which you want the goods shipped, mention this paper, and we will do the rest. Send money order or check with your order, and if everything is not exactly as represented your money will be refunded. The First National Bank of this city, or Bradstreet's Agency, or any leading firm, can inform you as to our reliability. WEST COAST STOCK FOOD has for many years been a standard condition powder in this section. See our full page adv. in the March 7th and 28th issues of this paper, or send for circular with testimonials.

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It is better to have the soil in such condition as to moisture and tilth that the seed will germinate and the young plants appear without further irrigation being necessary. If the soil was dry when the seed was sown, or is not sufficiently retentive of moisture, or if, on account of the nature of the weather that follows seeding, the soil dries before the plants appear, water should be applied as promptly as practicable. The young plants must have plenty of water in order that a good stand may be secured.

After the young plants appear, they should be given water frequently enough to keep them growing steadily. The application of water twice a month during the first three months is usually ample to secure a good stand. If sown during the winter season mentioned above, a light crop may be cut three or four months after sowing. After this, the application of water once a month is sufficient the first season. It is probably not economical to apply water during November and December, but beginning with March, water may be applied freely to advantage, under the conditions existing in this state. Where water is available at all times of the year when needed for alfalfa, it will probably be better in most cases to postpone the free application of water until the first of April. Alfalfa being very deep-rooted, water to the depth of two feet may be applied to advantage just before, or during the early part of the growing season. After cutting the first crop, water may still be applied freely to advantage. After cutting the second crop the application of one-half to two-thirds of a foot of water will be sufficient for the production of each subsequent crop. But the amount that will be necessary to secure a good growth during the summer, will depend very much upon the amount applied during the winter. If the field has been thoroughly wet during the latter season, two good crops can usually be cut without irrigation between the first and second cuttings; and in some cases a third, or even a fourth crop can be cut. During the cutting season, the best time to apply water is a few days previous to mowing. By this method the new growth starts promptly after each crop is removed.

Alfalfa is especially adapted to a region with a fluctuating water supply, such as we have. When once established, the crop produced varies with the water applied within certain limits. Water may be applied freely during the winter when it is abundant, and withheld entirely during the summer. In fact, it will live during several average years without the application of any irrigating water. One field that has been under the observation of the writer has not been irrigated for over four years, yet many of the plants are still alive, a crop having been cut each spring the first two of the four years. Up to a limit of about six crops of two tons each, the amount that a field of alfalfa will yield increases with the quantity of water applied. A total of four to six feet can be applied to advantage during the year. It is not easily killed by drought, but it thrives under and responds to irrigation as satisfactorily as does any crop grown.

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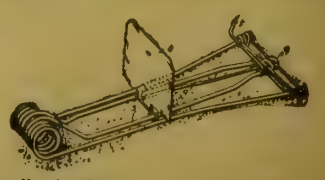

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Irrigation in San Diego

IN RESPECT to irrigation as well as general topography, San Diego county is divided, by its central mountain ridge into two entirely separate and widely different sections; the desert and the western slope.

Our Imperial Domain.

In the former is the Imperial valley so widely known and well advertised by the sensational efforts to stop the overflow of the Colorado river into the Salton sea. For a time it appeared that the very existence i this section hung in the balance, but with the succesful outcome of the work done by the Southern Pacific Railway, its future may be said to be assured.

It is doubtful if any richer agricultural section exists—even the famous alluvial plains of Egypt can be no more fertile. With the whole Colorado river to draw upon the sources of supply for irrigation are more than ample for any possible need.

Western San Diego County.

The Western Slope of San Diego county extends from the Pacific eastward and up to the mountain ridge at an elevation of upwards of 6000 feet—a region well wooded with pines, firs and cedar trees. The rainfall ranges from an average of 10 inches at the city of San Diego, to one of from 30 to 40 inches in the mountains where the rivers find their sources.

As the Government records are taken at San Diego, a mistaken impression of the rainfall throughout the interior is given.

The topography of the county is of a broken and somewhat rolling nature. The rivers find their way from the mountains down through valleys, and often pass through narrow gorges, which form perfect sites for dams and storage reservoirs.

The San Luis Rey Valley.

The first river below the northern boundary of the county is the San Luis Rey, which rises in Warner's Ranch. At the point where it leaves this ranch, the Huntington interests are to erect a dam which will form a large reservoir. The primary purpose of this enterprise is the development of electric power, as there is an abrupt fall of some 1500 feet below the damsite.

The water after that will be used for irrigation on the lands below, which have been bought by this syndicate all the way down the river to Oceanside, thus controlling riparian rights.

From the San Luis Rey river also, water is diverted during the winter's surplus flow to the Escondido reservoir, which supplies the town and fertile valley of that name. This valley is a favored spot for oranges, lemons and grapes. The citrus fruits are irrigated; the grapes are not.

The San Diego River.

The next important river to the south is the San Diego river, rising in the Cuyamaca mountains directly to the east of the city of San Diego, and some 50 miles distant.

In the mountains, at an elevation of 5000 feet, is the Cuyamaca reservoir. This empties into Boulder Creek just below the junction, of which with the main river there is a diverting dam, which turns the water into the San Diego flume.

The water from the reservoir is only used to supplement the surface flow of the San Diego river in the late summer and autumn, and in very favorable seasons is not required at all.

The flume is of wood six feet wide, and conducts the water for 34 miles down to and around Lakewood and El Cajon on a contour line. The water supply of the city was at one time obtained through it and the thriving lemon orchards of La Mesa and Lemon Grove are irrigated from this source.

The Sweetwater River.

Next to the south is the Sweetwater river, which also rises in the Cuyamaca mountains on the south-eastern slope.

At a point about seven miles from San Diego bay, and on the river, is situated the well-known Sweetwater dam, which was, at the time of its construction, in 1887, the largest masonry dam in the country, and which is a very perfect piece of work.

The depth of water above the dam is 75 feet, and the reservoir contains seven billion gallons of water when full, as at present.

It is estimated that this amount of water will serve the territory dependent upon it for four years. This territory comprises National City, Chula Vista and the Sweetwater valley.

It is a pressure system, the water being conducted in iron pipes to each house and orchard to be served. This system is an advantageous one for the orchardist as the water is always on tap, and there is no waiting one's turn for the zanjero to turn it on.

The Spreckels System.

The last, and by far most comprehensive, water system on the western slope occupies the territory between the Sweetwater system and the Mexican line. This is the system of the Southern California International Water Company, and belongs to John D. Spreckels, whose interests in San Diego city and county are very large. This will be, when completed, the most comprehensive storage system in this state. The plan embraces four reservoirs.

1. The Moreno, at an elevation of 3000 feet, will impound 15 billion gallons. The Moreno dam is about half completed and is situated on Cottonwood creek, one of the headwaters of the Tia Juana river.

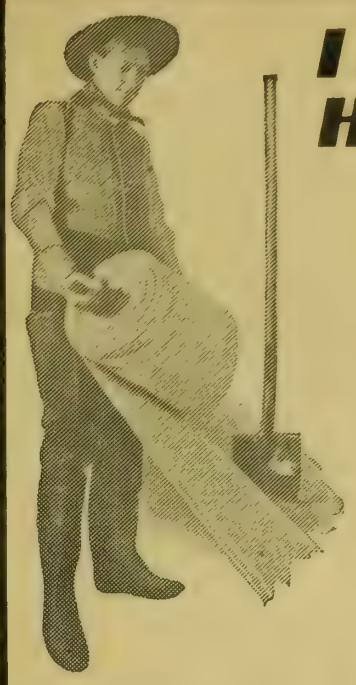
2. The Barrett dam, on the same stream below its junction with the Pine Valley creek, is at an elevation of about 1200 feet and will inpound 10 billion gallons.

Water will be discharged from the Moreno reservoir down Cottonwood creek to Barrett reservoir. From there it will be conducted in an open ditch or pipe over the divide to Dulzura creek down which it will run to the (3) Lower Otay reservoir, whose outlet is at an elevation of 400 feet, with a storage capacity of 14 billion gallons..

From it, water is carried through a 36-inch wooden stave pipe to the city of San Diego, which has received its entire water supply from this source since last summer.

Modern methods are in use to give the city pure water. Great pains are taken to prevent the growth of algae in the reservoir, and at the city end of the pipe line the water passes over

Continued on Page 431



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1¼ inch.....	3c per ft.
2½ inch.....	4c "
4 inch.....	5c "
6 inch.....	7c "
9 inch.....	10c "
13 inch.....	15c "

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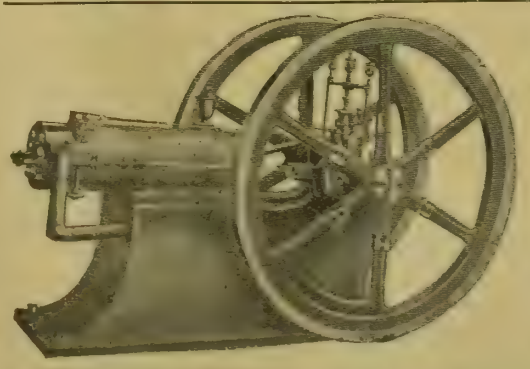

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The Ornamental Garden

By ERNEST BRAUNTON

WATERING THE ROSES.

SUCCESS in growing roses depends in a great measure on how they are watered.

Roses, when overwatered, most generally show it by a soft growth with yellow, mottled foliage, and when not enough water has been given them they assume a grayish color, with small foliage and corresponding thickness of stem.

It is not a hard matter to keep between these bounds, however, but how much water should be given to derive the best results from the different varieties is where the art comes in; and it is only by exercising the utmost care that we can, to a degree, come near to it.

We should always have an object in view in regard to watering, its beneficial or detrimental results—not today, but in the future. Going to nature we find roses growing very luxuriantly, when the season has been favorable to them. True, outside conditions are far from those which we can maintain in the garden, still it is the wild roses for the wilds, and the garden rose for the garden.

There are as many roses not brought to their fullest perfection by insufficient watering, as there are others injured by overwatering. As our soils differ very materially as regards evaporation, the best course to pursue is to make careful trials, allowing a part to get on the dry side, then giving a thorough watering, keeping another part moist all the time, and so on. This can be done on a small scale and the best method will manifest itself in a very short time.

We must take into consideration the immense amount of evaporation that is going on through the foliage during bright sunshine. We often see the shoots drooping during a hot sun; this is the cause of the foliage giving off more moisture than the roots take up to sustain the strength of the plant at the same time; hence the necessity of spraying the plants overhead occasionally, though it should never be done, except the plants call for it. By so doing the extra quantity of moisture needed is supplied, and, instead of the plants becoming hard, with small foliage and thin, wiry wood, as would otherwise be the case, it allows the absorption by the roots to be utilized in building up a strong plant.

IRRIGATING FOR ORNAMENT.

Ornamental grounds are met with in all portions of the civilized world, but the most beautiful of these garden spots are found where irrigation is practiced, even in countries where irrigation is not necessary for ordinary agricultural and horticultural pursuits, and perfection itself is only attained where nature has provided the cloudless skies of summer and the mild temperature of winter, for in connection with these natural circumstances irrigation is a condition precedent to the successful cultivation of the soil either as a matter of business or luxury.

ROOTS FOLLOW MOISTURE.

Very striking examples of deep rooting as the result of vertical moisture penetration can be observed in some of our native trees, which, while naturally at home on moist ground, are nevertheless sometimes found forming luxuriant clumps on the slopes and even summits of our coast ranges and foothills. If we examine the ground where this occurs in the case of California laurel, we will generally find that the soil in which they grow is underlaid by slate or shale standing on edge, into the crevices of which the roots penetrate, wedging them open; while themselves flattening out, and thus penetrating to moisture at considerable depths. The same may be observed in the case of the erect "bedrock" or foothill slates of the Sierra, on which native as well as fruit trees flourish in very shallow soils, sometimes reaching permanent moisture at the depth of ten or more feet below the surface. It can readily be observed during rains that there is comparatively little run-off from the surface of these lands underlaid by vertical shales.

ESTHETIC IRRIGATION.

The average American citizen is accustomed to ask this question: 'Will it pay?" when considering any business proposition, and then to ask: 'How much will it pay?" and hence we have first considered the commercial side of the question of horticulture in connection with irrigation, to the exclusion of the esthetical view of the case.

But the American people are not given up entirely to the worship of the almighty dollar—whether it be gold or silver—and we find that the beautiful, the esthetic, the ornamental lawn and garden are being rapidly developed, not only in public parks and around the fine residences of the wealthy, but in front of and around the rose-embowered cottage of the laboring man, who seeks to provide the luxuries as well as the necessities of life for himself and his family.

MAGIC OF WATER.

Contrast for a moment the home comforts, the social privileges, educational advantages, the general state of society upon a bare and wind-swept prairie sustaining one family per square mile, with the status of a population of thirty families occupying the same space, amid the comforts, the certainties, the wealth which springs from that stolid and apparently inert soil at the magic touch of water; their homes embowered in trees and vines, surrounded by fruits and flowers, enlivened by the songs of birds and the hum of bees; rejoicing in the refreshing shade of green leaves, the soft carpet of luxuriant grasses, the sweet, low musical murmur of rippling streams and the plash of sportive fishes, leaping and playing amid the lilies in verdure-bordered pools.

BANKING PLANTS.

A bank of plants is beautiful, and in grouping the plants the taller ones should be placed at the rear, and filled in with smaller ones, sloping them in such a manner that there are no open spaces at or near the base of the group. In order to secure the solid effect, it is necessary to elevate some plants above the floor, by placing them on inverted pots or boxes.

All pots should be concealed by small plants, and in this manner you secure a mass of foliage in which there are no thin spots. For filling in, plants of low growth or spreading habits should be used; trailers should be used in a manner to bring the mass of green down to the floor, giving the bank the appearance of staring from the base instead of from the pots.—Florida Agriculturist.

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The Vegetable Garden

By ERNEST BRAUNTON

GARDEN IRRIGATION.

A VERY important modification of the furrow system is the raised bed, which, under certain circumstances, is of great value in the vegetable and small-fruit plantation.

The raised bed is an elevation between two irrigating furrows. The field is laid off in narrow lands and several furrows thrown together so as to bring dead furrows about four feet apart, making long beds extending down the grade with their surface raised several inches above the old level. The motive is to arrange a plant bed with a water course on each side and below its surface level.

The whole plan is just the opposite of the depressed bed with raised ditches already described, and is obviously to meet quite different conditions. It is especially suited to a rather heavy soil in which water will move well laterally, rise well, and be retained. Irrigation is accomplished by holding water for a time in the ditches. Where the ground is sloping it is held in levels by dirt dams or by the cloth or metal dams already well-known, placed at intervals as required to raise the water nearly to the ground surface.

The arrangement has several advantages for the market gardener and is largely used by those of foreign birth, who rely upon hand work and desire to carry as many plants as possible per acre; for their rents for rich land near cities are usually high. It enables them to plant in close rows and in starting young plants it gives standing water along side, which they can easily flirt out with a pan or shovel when they think a little sprinkling is desirable. The Italian gardeners have a knack of doing this which is very interesting.

The chief advantages, however, are the distribution of water beneath the surface, which lessens the need of surface cultivation, and when the vegetables are well grown obviates the decay which comes to foliage by contact with a moist surface. The same is true of the use of raised beds for strawberries when grown on the heavier loams or when the light, shallow loams overlie hardpan and require frequent irrigation.

Another very important advantage of the raised bed lies in its adaptation to growth of vegetables and strawberries during the rainy season of semi-tropical climates. Not only is the raised bed more responsive to the greater warmth which comes to the air at intervals, and consequently promotive of winter growth of vegetables, but it also escapes the supersaturation which long rains may occasion. The deep ditches then act as open drains for the escape of surplus water. The system would seem to be widely available where there exists both the need of irrigation and the danger of excessive rainfall according to varying weather conditions.—Prof. E. J. Wickson.

There may be injuries by irrigation in the case of using excessive amounts of water a few days before picking. Walnuts are never injured by irrigation on land that has good under-drainage. The land might be leached out, perhaps, but there is no direct injury to the tree.

THE DEPRESSED BED.

The depressed bed, largely used in the growing of vegetables and small fruits, is really a form of rectangular checking.

In this case, however, the levees are widened so that they are not merely boundaries to confine the spread of the water to the inclosed areas, but they are also made to carry water to these areas by small raised ditches which are made upon their tops.

It is best for light, sandy loam, which has slight retentiveness and therefore loses moisture rapidly both by drainage and surface evaporation and must be frequently irrigated.

Shallow rooting plants like strawberries, which would perish by the methods of irrigation employed for them on more retentive soil, and which will be described presently, make very satisfactory growth and have a long fruiting season if grown in a depressed bed, especially if they are mulched well with rotten straw or coarse manure and the water allowed to distribute itself under this cover by admission from the raised ditch at several points at the same time.

The ditch at the surface level is much less satisfactory in such work; consequently it is run along the top of the levee. This arrangement is particularly adapted to very light soils, as stated, and especially in the hotter parts of the arid region, where water has to be applied once or twice a week to shallow rooting plants and where the shading of the ground by a mulch lowers its temperature and protects the roots from heat, which would be apt to destroy them in spite of the frequent use of water alone.

This recourse takes the place of mulching and sprinkling and is vastly better for a hot, arid locality. The sprinkled water flies off from the mulch with great rapidity and much water is used with little benefit to the plant, while the filling of the depressed bed from the ditch and spreading the water through and under the mulch is very economical of water and of most direct advantage to the plant.

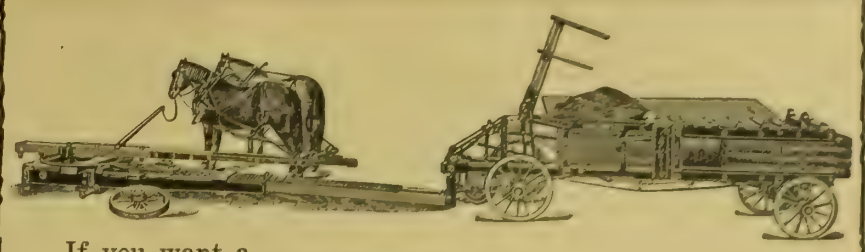
PRACTICAL IRRIGATION.

The man who knows nothing of practical irrigation may feel a sort of pity for the husbandman who is compelled to irrigate his crops in order to perfect them, but the man who cannot order his rain or moisture at will certainly has the pity of him, who with his hand on the headgate of his irrigation system, has absolute control of the elements so far as water is concerned.

SWEET CORN.

Sweet corn is generally planted in soil that has been previously irrigated, in some cases with a combined lister and drill, but more usually along small furrows through which water has been previously run, and that are left for the first irrigation. Some farmers, however, drop the seed into each third or fourth furrow as the land is plowed. When the corn has come up and the water applied previous to plowing and planting has evaporated, furrows are run between the rows for subsequent irrigation.

Carelessness in flooding trees in hot weather may injure them, but when judgment is used in irrigating, trees are not injured by water.



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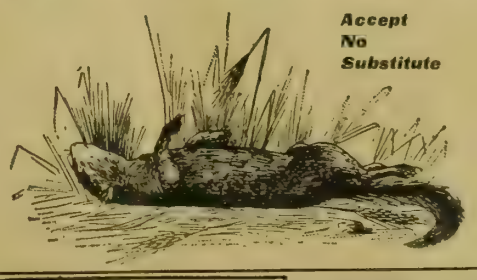

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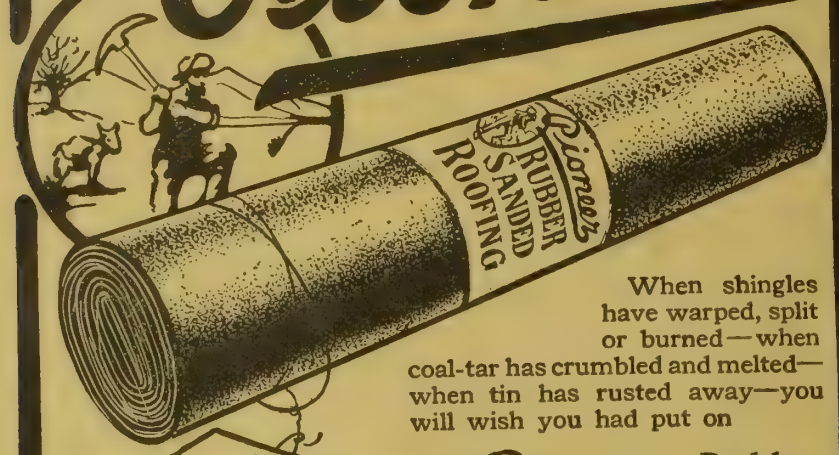

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The automobile has come to stay. No matter how great may be the opposition to it by the farmers as a whole, and the liveryman as a class, it is winning its way into more perceptible popularity each year. It has so far overcome prejudice as to even find encouragement today in the independent farmer who sees in it the best friend the good roads movement has at the present time.

James W. Abbott, Ex-United States Commissioner of public roads, writing on this subject makes a strong appeal to the automobile interest to get in and boost the good roads movement with all its might.

"Having now reached the period when the motor car industry affects every possible department of human activity, what could be more logical than for that interest, as such, to take up the road question and proceed to solve it? No one can say longer that the automobile interest should hold itself in the background lest it arouse antagonism. The automobile interest has become IT in the world. The automobile needs good roads. It should combine its forces and get the roads."

The illustrations here given show a poor road before working and the same road after finishing. They need

Courtesy Hawley, King & Co.

A Poor, Flat Road Before Grading

"When the automobile captured the farmer it had conquered the world. The hayseed of other days may once have been correctly depicted in overalls and whiskers upon the board seat of a rickety wagon, holding the lines over a pair of venerable plugs. The passing of this type is, in my mind, the most important fact of the Twentieth Century to date. The farmer of today is the nabob. His mortgage has been paid off, he has money in the bank, travels for pleasure, and rides in an automobile. Not all of him, but enough to indicate with certainty the economic changes which are imminent. From this time on his interests square absolutely with those of the rapidly augmenting element to which the motor car has become an indispensable necessity. In the conquest, which is just ahead, for the commercial vehicle, the farmer will be strictly in it. The truck car will haul his products to rail or water; with motor devices he will plow, plant, sow, and till his fields and gather his harvests. It is easy to see what the commercial vehicle will do in every line of work. no further tribute than their appearance gives them. They are the most valuable adjunct to farm life at the present time. The automobile interest can help the cause of good roads mightily if it will.

Courtesy Hawley, King & Co., Los Angeles

Same Road Graded, Curved and Smoothed

This grade can be easily maintained with a little attention after heavy rains. When it gets hard it will shed rain quickly and thoroughly.

WHEN TO DRAG IT.

When the summertime is here,
When the corn is in the ear,
In the winter cold and drear;
Every season in the year;
Drag the road!

When you've nothing else to do,
Drag the road,
It will keep them good as new.
With a purpose firm and true.
Fall in line—it's up to you:
Drag the road.

Would you do the proper thing?
Drag the road.
Set the system on the wing,
Drag the road.
Give the drag a lively swing,
Toss the laurel-wreath to King.
Hats off! everybody sing,
Drag the road.

—J. L. Bollinger

Sometimes fruit trees are irriga continuously and never cultivated as to open the soil to sunshine a air. Such trees are not so stocky a strong.

The History of Irrigation

Irrigation of land, which to a majority of the American people of today is a new idea, is an art that appears to be almost as old as the culture of the soil by man. It was undoubtedly practiced for many centuries previous to any authentic written history. In the earliest traditions of the Chinese people, which are very ancient, irrigation is mentioned. In Egypt, Syria and the ancient kingdoms of Eastern Asia agriculture depended almost entirely upon irrigation, and still so depends. The Bible contains frequent reference to the irrigation of gardens, vineyards and fields.

The earliest agriculture of Europe, Asia and Africa began in arid lands, very similar to those of Arizona, New Mexico and California. In India, irrigation was practiced for many centuries by utilizing small streams and great rivers. As population increased, the storage of water was introduced. ravages of time up to the present day. In Spain, irrigation was also practiced by the Moors, and brought to a high degree of excellence.

On the discovery of this continent, the Latin invaders found the natives practicing on arid lands in Mexico, Peru and the southwestern portion of the United States. Remains of vast irrigating canals and and reservoirs in Arizona are believed by some antiquarians to be 10,000 years old. These invaders, who themselves came from an irrigated country, kept up the practice in a small way. It was not, however, until the Mormons emigrated to the arid wastes of Utah that irrigation on a large scale was undertaken by Americans in the United States.

Immense tanks, or reservoirs, and canals appear to have been constructed centuries before the Christian era. In the island of Ceylon alone are 5000 ancient reservoirs. Since the British have had control of the country, irrigation works have been constructed on stupendous plans, and thousands of old reservoirs have been restored. Over $360,000,000 have been expended on irrrigation works, one canal alone costing $15,000,000.

The remains of reservoirs in Palestine, which are supposed to have been constructed in the days of Solomon, for the supply of Jerusalem, show much engineering skill. The Phoenicians, at the height of their power, were celebrated for their canals. The Greeks at a very early age, paid great attention to hydraulic engineering. Ruins of large aqueducts are found scattered through Greece. Herodotus describes a conduit three feet wide, which was conducted through a hill in a tunnel a mile long. Another masonry aqueduct crossed a ravine 200 feet wide and 250 feet deep, and apparently had the form of an inverted siphon.

Rome, during the reign of Nero, was supplied with water by nine large conduits, having an aggregate length of 255 miles, and deliverin over 173,000,000 gallons daily, which amount was afterwards increased to 312,500,000 gallons, or 325 gallons to each inhabitant. The Romans were skilled in hydraulics. All houses had siphons, or water pipes. They drained the Pontine marshes, and made all their rivers navigable. In France, Spain, Portugal and other countries which the Romans conquered they constructed great aqueducts, many of which have defied the

CURRENT WHEELS.

In its simplest form a current wheel consists of a large skeleton roller made of wood, with paddles projecting beyond its rim. It is hung on a shaft and supported at both ends by piers or posts, so as to allow the wheel to dip into the water to the width of the paddles. The simplest device for raising water with such a wheel is a row of buckets placed on the rim so as to fill at the bottom of the wheel and empty into a trough near the top. A more complicated way is to connect the wheel to chain and bucket gear, or to a pump of some sort. These more difficult methods of construction are necessary in all cases where it is desired to raise the water to a height greater than the diameter of the wheel used.

Too much water continuously will check growth, turn foliage yellow and stunt the tree. The land should be cultivated between irrigations until there is but little moisture at the surface, but not allowed to become dry enough to curl the leaves. This will make healthier trees and a better quality of fruit than over-irrigated land, but the irrigation should be thorough and deep.

There are 35-year-old apple trees at the Hicks ranch in San Bernardino County, Cal., that have a ditch of water running constantly within 5 feet of the trunks and yet are very thrifty and bear nearly every year apples of highest quality. They will not grow, however, in a swamp, but must have some drainage.

Thousands of acres of trees and vines are seriously injured by seepage of water from ditches and the raising of water levels. Drainage of land to remove surplus water is one of the greatest needs in some localities.

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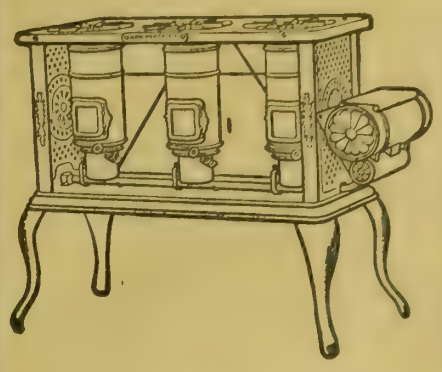

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California Cultivator

ESTABLISHED 1889.

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CONSERVING WATER.

The late legislature of California had before it a bill to compel owners of flowing wells to cap them to save water from running to waste. The measure was one of merit, and the law ought to have been enacted years ago. That an enormous flow of well water is annually lost by neglect is evident to any observer of conditions surrounding uncapped wells. We recall seeing in Central California, several flowing wells from which the water was escaping in streams, water enough, if confined in one ditch, to have irrigated hundreds of acres of land.

In a country dependent upon irrigation this neglect is little short of profligacy, for the time will come, and that all too soon, when every inch of water will be needed to maintain the agricultural conditions of the state.

We are developing agriculturally so rapidly, expanding our irrigation ditches so fast and sinking wells so numerously, that we are gradually drawing from the ground the supply of the underground basins. This is not true of any particular section, but of all the territory where irrigation from wells is a necessity. The importance of conserving the water not absolutely needed in irrigation, is a vital one to the future prosperity of the whole state. Two years ago a commission appointed to investigate the water conditions in Southern California reported that there was a marked lowering of the level in the wells already in operation, caused by too heavy a demand for irrigating purposes. Since that time, however, the rainfall has been so abundant that anxiety on the score of water supply has been largely abated. But these conditions may not prevail with certainty, and the importance of judicious use of our basin water is apparent if we are to provide for future contingency. When we investigate the location of those areas, which show losses and of those which show gains, two facts which we should expect appear. The losses are in those areas where most pumping plants have been installed, and the gains in those areas of less intense development; and again, the losses are remote from the channels of the large streams, and the gains are near them. With two successive winters of heavy rainfall, ground water levels have recovered in favorable situations, and where pumping has not been extensive. While in less favorably situated or more heavily pumped sections declines have continued. With average rainfall it is safe to say there would be but a limited area that would hold its own. With substantially less than average rainfall, declines will be well nigh universal. As the situation stands now, ground water levels generally fall with average, and less than average precipitation. They partially recover only when the rainfall is well above the average. It is then the part of wisdom only to use every precaution not to tax our underground basin supply beyond actual need, for if we do, and our average rainfall declines, the country will face a serious water famine in the agricultural districts. Retain, therefore, all water not actually needed, in the ground basins, by capping flowing wells.

OUR INLAND RIVERS.

The movement inaugurated by President Roosevelt, having for its purpose the development of a comprehensive plan for the improvement and control of the inland rivers of the country, has awakened the keenest interest of the people in the states through which these rivers flow. To exploit this scheme he has appointed an Inland Waterways Commission consisting of Theodore E. Burton, chairman; Senator Francis G. Newlands, Senator William Warner, John H. Bankhead, Gen. Alexander Mackenzie, Dr. W. J. McGee, Mr. F. H. Newell, Mr. Gifford Pinchot and Mr. Herbert Knox Smith. In his letter to Congressman Burton, notifying him of his appointment, the President refers to the inability of the railroads to afford prompt transportation to the products of the country, and the necessity of providing a complementary water system, a subject which has received but scant attention in the past. The commission, he says, should consider the relation of the streams to the use of all the permanent natural resources, and their conservation for the making and maintenance of prosperous homes. He also believes that any plan, to be feasible, should recognize the means for executing it already in existence, both in the departments of the federal government and in the states and their subdivisions.

The improvement of the great streams of the Middle West, like the Missouri and Mississippi, will afford an outlet to the congested transportation problem of that region and result in the saving of millions of dollars to the farmers. So if the Sacramento and San Joaquin rivers in California could be improved, especially the Sacramento, as far as Colusa, the country thereabouts would witness such a marvelous increase in industrial and agricultural resources, as to make it the peer of the state in a brief period of time. The Nation will profit by the proposed development of its waterways, while the railroads will not suffer, as they have demonstrated their inability to take care of the frieght which the producers seek to market.

TIMELY ADVICE.

As a matter of precaution simply, the Cultivator has urged the farmers of the Pacific Coast to beware of incurring heavy debts. There may not be any shrinkage in values within the next year, or so, and there may be, we cannot tell that at this time. But the safe rule is to keep well to shore thus avoiding possible loss or inconvenience by any falling of prices in land values.

There comes to our attention the following timely advice offered by the Salinas Index, which is along the line the Cultivator has argued for more than a year.

We quote: "Caution should certainly be observed until the next crops are assured, for we have been blessed for six fat years and experience shows that the lean years must follow. The high price of farming land in many states is based on present high prices of farm products and large crops, and in many cases the prices asked for farms will, under the most favorable conditions, only pay very reasonable interest, and with lower prices and shrinkage in crops would make but a very poor return on the investment. The farmer who is in debt might, if crops are poor, find himself in difficulties, and now, therefore, is the time to get out of debt, so as to be on the safe side if business depression arrives."

RELATION OF IRRIGATION TO FRUITS.

(Continued from First Page.)

which appeal to the fruit eater and for characters which win the fruit trade, has long been in controversy, and the prejudice against irrigation from these points of view has been most outspoken.

This prejudice still exists in the minds of those who have not had opportunity for careful comparative judgment and no experience to distinguish between properly irrigated and excessively irrigated fruit. Of course, theoretically the best fruit must come from the tree which has moisture continually present during its growing period in the amount required for perfect development of its fruit.

Too little water for such perfect growth would injure the fruit and too much water would also injure it, and although the injuries proceeding from lack and from excess might be different, they would all render the fruit defective. But there have been prejudices against irrigated fruit which have been slow to disappear even among fruit growers who might be presumed to have the best opportunities for speedily reaching sound judgment on the matter.

The first striking character of irrigated fruit to attract attention was unusual size, and such size was often found to be unmatched by richness and flavor. Medium-sized fruit was better to eat.

The general conclusion then was that water artifically applied made a fruit fine to look upon but not otherwise desirable, and from this single observation arose the quite general opinion that the farther it departed from largeness the better the fruit; therefore the smaller the fruit the richer in sugar and the more refined the flavors and aroma.

It is difficult to replace this opinion by urging theoretical considerations of the actual need of the plant for a continually adequate moisture supply, nor do the determinations of sugars and essences by fruit analysts nor the awards of exposition juries convince all whom they reach. It seems desirable then to cite general experience of those who judge fruits by ordinary sense methods or by commercial standards in order to determine whether such experience reinforces the conclusions reached by those who approach the problem along lines popularly distinguished as "scientific." This was the motive in the inquiry upon which this report is based.

The attempt was made to secure the results of the experience of fruit growers, some of whom could give comparative judgment and others of whom perhaps had grown only irrigated fruit and could speak positively from experience as to its suitability for various commercial purposes.

Although the writer was aware of the general change in the mind of growers toward the use of water even in regions of considerable rainfall, he must acknowledge that the declaration of the benefits of irrigation in developing desirable qualities in fruit is sharper and wider than expected and there can be no question as to the impression and influence which will follow the publication of such testimony.

The testimony certainly establishes beyond question the quality and commercial standing of irrigated fruit through more than a thousand miles of distance along the Pacific Coast. In this distance the conditions range from fairly wintry to strictly semitropical, and from fully arid to quite humid, judged by the annual rainfalls in the different localities. In all these wide ranges there is the evidence of extended experience that irrigation improves fruits in all respects, provided water is supplied at times and in amounts which trees under the different circumstances require for the best discharge of their fruit-bearing function. Obviously there are conditions under which irrigation is unnecessary, and there is irrigation practice which may tend toward the development of some desirable characters and the loss or reduction of others, but these facts do not militate at all against the wise use of water.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

Crops in the vicinity of Elizabeth Lake look extremely promising.

Brawley is one of the best places in the country to raise Bermuda onions.

Conditions in Ventura county are favorable for a large crop of beans and high prices.

Several owners of fine animals are proposing that a horse show be held in Imperial this spring.

The melon acreage at Brawley is close to 1,000 acres, with between 700 and 800 acres of good stand.

The Imperial valley will ship ripe cantaloupes the first week in May, thereby breaking all records for earliness.

Two cars of fat sheep and five cars of fat cattle were shipped from Imperial last evening to the Los Angeles market.

For the first time in many years farmers in the southern part of the state are complaining bitterly of too much rain.

Practically all the bean land in the state has been badly damaged except the lima bean lands south of the Tehachapi.

Mr. Schulte has twenty-eight acres in cabbages in the Orangethorpe district and believes his crop will average at least ten tons to the acre.

There will probably be somewhere from ten to a dozen carloads of grapes shipped from Imperial during the few weeks following soon after June 1.

The Imperial creamery Saturday made 1400 pounds of butter, breaking the record. The average output of the creamery is now 1100 pounds a day.

The farmers of the Montalvo section are progressing very rapidly with the cultivation of their farms, and a record-breaking bean crop is anticipated.

There is a good prospect that the planting of about 1500 acres of grapes at Imperial, during the past winter, will be exceeded during the coming winter.

Shearing sheep is now going on at the Moulton ranch east of Tustin where about 12,000 sheep are undergoing the process of being shorn of their fleecy coats.

Leading cabbage growers do not believe there will be over 450 carloads of cabbages in Olive, Fullerton, La Habra and Whittier belt. The estimate early in the season was 600 cars.

A series of investigations, to be carried on permanently by the Bureau of Soils of the United States Department of Agriculture, will be commenced in this state at once by Mr. W. W. Mackie, who has arrived from Washington, D. C.

The cabbage output of the Fullerton-Whittier district last year was about 500 car loads; many acres of early cabbage this year will not run over from two to three tons per acre; in some places the heads are running to seed largely.

At the Minnesota dairy convention H. J. Roseau spoke on educating the farmer to produce good milk and cream. The patron must be made to see the profit in his own pocket for caring for his milk. The higher prices obtained for extra creamery butter, the larger price the creamery can pay for butter fat.

E. F. Pember, in the Dairy Farmer, says that no farmer has any right to expect ideal milk and beef production from the same cow. He should not be satisfied until every cow is a pure bred one of some sort.

A very good cure for a cough is oil of tar. Give teaspoonful each morning when you first find your horse coughing and it will usually cure the cough and prevent distemper. It is cheap, simple and effective.

Never allow two foals to feed out of the same box. One is sure sooner or later to become master and secure the lion's share.

HORTICULTURE.

Redlands sent forward a total of 135 cars of oranges last week.

Redlands has shipped very close to 2000 cars of oranges this season.

The acreage in walnuts in California is 4275 bearing and 2120 non-bearing.

Last year the walnut crop of the Fullerton-Placentia Association sold for $170,000.

Los Angeles county has 865 acres of apricots; Orange, 2030; Riverside, 570; San Diego, 400.

The state acreage in olives is put at 10,800, of which Los Angeles reported 2250 and Butte 1050.

The amount of water now being used in the irrigation of Imperial valley is breaking all records.

The totals of the apple orchards in the state figure out 13,700 acres of bearing orchard and 6900 of non-bearing.

On Saturday the four packing-houses of Fillmore had ten cars of oranges packed, but were unable to get any cars to ship them in.

Reports from Rivera and Whittier say that there will be a larger walnut crop in these sections than last year if the weather is favorable.

The acreage in plums for the entire state is given at 7490 bearing and 2250 non-bearing. Other varieties of prunes are put at 110 acres.

Walnut blossoms in the south are now beginning to "set" and if the weather is favorable for the next few weeks, the crop promises to be larger than last year.

The annual report of the State Board of Equalization gives some very interesting figures regarding the acreage in fruits and nuts in the various counties of the state.

Messrs. Carnes and Maskew this week liberated several colonies of the newly imported parasite for red and purple scale in Wm. McLauchlin's orchard at West Anaheim.

The Monrovia-Duarte Fruit Exchange has distributed to its patrons $30,000 in dividends accruing from the sale of oranges. The second dividend for February amounted to $9000.

The following is our southern walnut acreage: Orange county, 2385; Ventura county, 1375; Los Angeles county, 920; Santa Barbara county, 440; San Luis Obispo county, 410.

The citrus fruit in Southern California which has not yet been picked is in better condition than it usually would have been at this season. The cool weather and continued rains have kept it firm and sound.

The cold and rainy weather has spoiled whatever chance might have existed for a good crop of apricots, and the condition of the rest of the fruit is more or less problematical, it being too early to determine what loss if any has been occasioned by the continuous storm.

RAINFALL.

Healdsburgh has had for the season 42.91 of rain against 36.97 inches this date last year.

Lindsay has had 11.86 inches of rain against a total for last season of 20.52.

Vacaville has had rain for the season up to 26.68 against 23.62 for the same time last year.

Dinuba has had 14.15 inches of rain, considerably more than any year in the last ten.

Since September 23 to date, 18.39 inches has fallen at Mt. View as compared with 12.77 inches during the same period of last season.

Watsonville has had 38.42 inches of rain.

Too much or too frequent flooding around the tree with too little cultivation between irrigations may do injury. Too many people who have plenty of water use it too frequently, thinking to escape the trouble of cultivation.

Northern California

AGRICULTURE.

The overflow in the river district has put all of the dairies in that section near Dixon out of business.

There is good profit in raising sugar beets in San Joaquin county and many carloads will be shipped from Lodi this season.

The Tehama county wool this season is said to be of very good quality and is expected to sell for from 20 to 22 cents.

The devastating floods of the Sacramento and San Joaquin rivers during this winter have made the bean market extremely firm.

The Ukiah Chamber of Commerce has taken up the matter of establishing a creamery for the sole purpose of assisting the farmers.

Mules are being shipped from Orland at a rate that promises to create a big shortage for the work in the harvest fields this summer.

Some large farmers in the San Joaquin didn't get in any grain. One farmer, who had in 2000 acres last year, has only 75 acres in this year.

From all indications the grain crop will not be over twenty-five per cent. of the usual crop in the northern section, as there is but little wheat sown.

A grain buyer who does business in Merced and adjacent counties estimates that only 30 per cent. of the usual area was sown to grain this year.

The rainfall record for March was broken at Ukiah, the total being 18.18 inches. The greatest previous record for the month, was 14.47 inches in 1879.

Many acres of bean land in Central California is still under water and cannot be planted to beans this year, and on that account a shortage is expected.

It is expected the wool market will open at Red Bluff soon, as the sheep men are now shearing their flocks and the first load of spring wool came in Tuesday.

There are many acres in the Woodbridge district that on account of the recent inundation it will be impossible to raise other crops than sugar beets this year.

S. N. Mathews of Salina shipped 200 head of stall-fed steers to the Western Meat Company of San Francisco. One steer weighed 2130 pounds and brought $95.75.

In Yolo county the farmers have taken steps to organize a local insurance company under the laws of the state, and already have over $100,000 of insurance offered.

L. P. Denny recently sold five carloads of cattle off his ranch near Corcoran. Among the lot were two Angus steers less than one year old that weighed 910 pounds each.

Some of the farmers owning lands down on the river south of Red Bluff have gone into alfalfa extensively and are now installing electric motors and pumps with which to irrigate the coming season.

There are 4661 bales of hops unsold in Ukiah valley and the price seems to be going up. Several sales at 9½ and 10 cents have been made in Santa Rosa and it is reported that 11 cents has been offered.

The cause of the shortage of grain crops in Central California is the fact that after the ground was moist enough to plow the rains were continuous and, for the most part, prevented plowing and seeding.

The state farm at Davisville will be the scene of much activity during the present year. A contract has been awarded by the state board of regents for the erection of two cottages at an outlay of $6751.

The last legislature appropriated the sum of $132,000 to provide for the erection of buildings, improvements, the purchase of furniture, supplies, machinery and livestock, and to pay the running expenses of the state farm at Davisville.

HORTICULTURE.

Another large winery is to be erected at Healdsburg between now and vintage season.

An orange sale in New York netted a Lindsay grower $764.57 for 384 boxes of navels and seedlings.

Grape vines in the north are not yet far enough advanced to make a guess on the crop possible.

Curled-leaf is making its appearance in peach orchards above Orosi, the Alberta showing up worst.

The recent floods about Lodi have exterminated by drowning fully 50 per cent. of the larvae of the grape leafhopper.

The apricot crop will be a total failure, while prunes will suffer forty per cent. loss in the Santa Clara valley.

Peaches will be a light crop about San Jose. So far as ascertained other fruits will be above normal in their output.

A report has been received at Porterville of the sale in Minneapolis of a car of oranges belonging to E. E. Graham for $832.

Apricots about Gridley will probably prove a failure, but the almond trees are holding out surprisingly good prospects for a crop.

The bright weather of the past few days is encouraging and fruit growers about Gridley are confident of a good stand of peaches.

Curl-leaf and peach blight, two well-known dreaded diseases to fruit men, have been found in a number of the orchards near Visalia.

Prunes in the north were not far enough advanced to be hurt by the heavy rains and it is thought that the crop will be a normal one.

The chances of the grape growers in San Joaquin county to supply California with raisins and table grapes this summer are most encouraging.

Messrs. Holmes and Sweet, soil experts, are now engaged making a survey of the soils north of Williams extending from the foothills to the Sacramento river.

The state forester is in Lake county assisting in the preparations of plans for the extensive planting of eucalyptus trees on a tract of barren land in that county.

A. J. Delaney's car of oranges contained 382 boxes and brought free on board at Porterville $887, from which Mr. Delaney netted above packing charges $742.90.

The parasites which have been kept on cold storage in the state hatchery during the winter months, will soon be taken out into the orchards and given a chance to hatch out and mature.

Among the buildings provided for the Davisville state farm are a dairy building, livestock pavilion, dormitory, barns, green-houses, propagating-houses for horticultural and viticultural purposes, necessary cottages, fences, etc.

The largest improved property deal in the history of the orange belt of Tulare county was consumated last week at which time the Camilla Ranch just east of Lindsay was sold to a newly organized company of local and Eastern gentlemen for $250,000.

It is too early to make anything like a correct estimate of the fruit crop for the coming season in Vaca valley, but at the present time late blooming plums, and cherries, grapes, French prunes and Bartlett pears look promising; peaches will be light, and apricots are practically a failure.

Since the fruit growers in this locality have combined to resist the exorbitant demands of the Japanese laborers, this class of help has not been quite so independent. The test will probably come when the season is at its height and fruit ripe on the trees. Then the growers should form a stronger compact so as not to be at the mercy of the little brown men. Good white help is preferable at all times if the same can be secured.—Sutter County Farmer.

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

Buy the World's Famous Egg Food No. 4

Midland

IF YOU WANT EGGS
YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Haphazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultry men who have used these machines have supreme confidence in their ability to hatch and breed. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for the greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. Filcher, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clork Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

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S. C. White Leghorn Eggs

For Hatching, from Captain Mitchell's Strain.
Large Birds. Prolific Layers. Large White Eggs.
Order Books Open for 1907 Season.

The Lincoln Avenue Poultry Yards

Carl C. Curtis, Owner, Pasadena, Cal.
Successor to Captain E. Pryce Mitchell
. Lincoln Ave. and Ventura St.—Altadena Cars

Excelsior Mills

Excelsior Chick Food

Excelsior chick food is a perfectly balanced ration for your growing chicks. Will raise the largest possible per cent. of your baby chicks. All pure food, no shriveled grain and filler used in its manufacture. Absolutely clean and free from dust. No waste.

The Best Food on the Market

Ask for Excelsior. If your dealer cannot supply you write us. Circular free if you mention the Cultivator.

Del Monte Milling Co., 242 Central Ave., Los Angeles, Cal.

Best Incubator

On the Coast—best anywhere. Made right—prices right. Guaranteed. Catalogue free. Also great **Combination Brooder.** It is great—both indoors and out.

Pacific Incubator Co.

PASADENA, and
707 So. Spring St., Los Angeles

Also for sale by
Johnson & Musser Seed Co.
113 North Main Street

Bemis Plymouth Rocks

Barred and White

Prizes Won at Alameda County Poultry Association Show, Oakland, 1907—22 Regular Prizes and 3 Silver Cups. Can furnish best birds and eggs at reasonable prices. No incubators lots furnished

Mrs. Florence E. Bemis, 1757 19th Ave., Oakland, Cal.

When writing advertisers, mention Cultivator.

Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

WATER FOR POULTRY.

WATER! water everywhere and not a drop to drink!" was the sad refrain of a pen of hens. They could both see and hear the limpid water coursing along the furrows to irrigate the nearby oranges and why, oh! why, should they be limited to a little drop of foul smelling, warm liquid at the bottom of an old tin lard pail, when there was water in plenty so near? Did the green oranges need it as much as they?

Importance of Water.

This is not an imaginary picture, it is one that I am sorry to say I have seen with my eyes and the cruelty of it made my heart ache. "It is an insult to demand eggs from fowls kept under those conditions," was my remark to a friend.

Few realize the importance of water, pure, fresh water for hens. How would the best and cleanest of poultry keepers like to go out and take a deep draught of the same water that their hens are condemned to use?

Dr. Sanborn in writing on this subject says: "Impure water is the cause of many sick birds. All birds drinking bad water do not become sick. If they did, letters to poultry editors would be too many to answer. Towns and cities known to be healthful are sure to have a pure water supply, and poultry plants that are known producers of sturdy birds are careful to supply clean water. Not only must good water be given, but the dishes must be kept free from filth. Water is so cheap and so easily given, that it seems a pity that so many seem to think it is something to be supplied or not, as is convenient."

No Water, No Eggs.

"Hens insufficiently supplied with water are poor layers, and if the available water is bad, they are in a condition to contract disease because of their lowered vitality. Filthy water is a good carrier of catarrh, roup and cholera germs. Cleaning daily the water dishes and giving fresh water diminishes the danger of these severe diseases getting a foothold.

"Many a promising lot of brooder chicks have died solely owing to being obliged to drink warm, filthy water, while the owner of the birds comforted himself by thinking that the diarrhoea must have been owing to a cold."

Dirty Water Makes Poor Eggs.

Irrigate your land if you wish, but water your poultry first! I have spoken of the humanitarian side, of the cruelty of not attending to the wants of your fowls; now let me show how it affects your pocketbook. Lack of water lessens if it does not entirely stop the egg yield. The contents of an egg are nearly seventy per cent. water!

Almost three-fourths of the eggs that you ate for breakfast were composed of water. Was it clean water or dirty? "Can you let me have some eggs for breakfast?" said one neighbor to another in my hearing a few days ago. "No! but I can get some from Mr. Vulcan," was the reply. "Oh! I don't want any of his eggs, they have such an unpleasant taste!" Dirty water!

Some years ago when I was in the poultry business my doctor came to me with a request to take some eggs to a patient of his. When I took her the eggs she said: "I have not tasted a nice flavored egg since I came to California, they all taste of dirty water." Mine, however satisfied her.

Hens are Two-thirds Water.

Scientists have analysed the body of a hen and have found that the very large number of different substances found in her may be grouped under four heads: (1.) water; (2.) mineral matter; (3.) protein, or nitrogenous matter; (4.) fat.

Water is the largest of these, and amounts to about sixty to sixty-five per cent. of the body of the hen. Nearly two-thirds of the hen are water. Dirty water or clean water? Which?

If you want well flavored fowls for the table give them plenty of clean fresh water. If you want delicious eggs see that the hens have clean water to drink, and keep that water shaded in the summer time.

Hens are often called egg machines, and they are the only machines that do lay eggs. If you want nice tasting eggs you must surely put into your machines the food, and especially the water, that is pure and good. Three-fourths of the egg is water; if the hen lacks water, she cannot make the egg, and will stop laying, and if the lack of water is continued she will soon become a very poor layer, even if no other ills befall her.

Spargur's Trap-Nested White Leghorns

Eggs from 200-Egg Hens, $1.50 per 15, $6.00 per 100
From Second Best Pens, $1.00 per 15, $5.00 per 100
Indian Runner Duck Eggs $1.00 per 13, $5.00 per 100
Blue Andalusian Eggs, $2.00 per 15, prize winning birds

H. G. Spargur - Soquel, Cal.

1907 LOS ANGELES 1907

We won on White Rocks, Barred Rocks, White Wyandottes, Buff Leghorns, White Crested Black Polish.
EGGS FOR SALE. SEND FOR CIRCULAR.
Golden Crest Poultry Ranch.
Box 412 **Santa Ana, Cal.**

East Side Poultry Yards

Have pure bloods. Eggs for hatching. Hatching chick a specialty.
Barred Rocks **Buff Orpingtons**
Prices Right
E. J. Look
16 Hancock St. **E. San Jose, Cal.**

COLUMBIAN WYANDOTTES

Won 1st Cock, 1st Hen, 1st Cockerel, 1st Pullet, 1st Pen and all Special Prizes at San Jose Show in competition with birds from Southern California. ***Eggs, $2.50 per Setting. Stock For Sale.***

R. Walker Mantz, Rural 21, San Jose, Cal.

S.C. White Leghorn Eggs for hatching $5.00 per 100. Large birds
Good Laying Strain
Take Redondo car via Gardena to Strawberry Park
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WHITE, BUFF COLUMBIAN WYANDOTTES
And Golden Sebright Bantams, prize winners
Stock and Eggs in season
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WHITE, BUFF AND PARTRIDGE Wyandottes
Won 26 Ribbons and Special Prizes at the Poultry Breeders' Show, 1907
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Buff Plymouth Rocks

A few fine cockerels $2.00 each, Eggs $2.00 for 1
Very choice Eastern stock.
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WHITE WYANDOTTES ***Hubbard Stock***
Heavy-laying prize-winning strain. Eggs $2 fo 15; Baby Chicks 20c each. ***Cannon Poultry Co***
2851 Morgan Ave., Los Angeles, Cal.
Take Slauson Ave. car to 29th St., walk 1 block wes

Chicks Hatched
From Eggs Sent Us

From Brown Eggs, 4c
From White Eggs, 3½c

Minimum Charge, $2.50 per Hundred Eggs. No direct charge for infertiles.

Bihn-Schofield Method

51,000 Hatched Last Year, Shipped to Five States
Combined Egg Capacity, 45,000

M. A. Schofield Gardena, California

SILVER LACED WYANDOTTES

At the recent Poultry Breeder's Show we won eight ribbons on eight entries. "The best quality seen here for years. 1st cockerel has the best marked wing we have seen." —Pacific Fancier.
Eggs $1.50 per 15.

WHITE PLYMOUTH ROCKS

Grand laying strain, large vigorous stock, eggs especially recommended for incubator hatching, $1.00 per 15, $5.00 per 100, special mating $1.50 per 15.

FAIRVIEW POULTRY YARDS

A. E Nelson, El Monte, Cal.

SET Incubators and Hens with Eggs from good, healthy, farm-raised

White Minorca and White Wyandotte Stock

S. W. MORGAN, Sunnyside, California, has such. Price $1.50 setting, $7 per 100

White Rocks and Black Minorcas

They are beautiful birds; Rocks as white as snow, Minorcas black as a crow. Cocks from W. M. Humphrey's and Harry E. Rose's yards. Eggs for sale. Best pen, $1.50 per setting of 15, or $7.00 per hundred. Second best, $1.00 per setting of 15, or $5.00 per hundred.

Chas. S. Hunt, El Monte, Cal.

O. K. Trap Nests Shows the hen that lays the eggs and keeps her from eating or breaking it after it is laid.

O. K. Feeder Just the thing for your Scratch Shed. Send for circular explaining its workings.

C. B. Williams
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COLUMBIAN WYANDOTTES

Winners at Breeders' Great Show, 1907. 21 prizes on an entry of 26 birds. Stock for sale, also eggs $3 and $5 per setting of 15; $20 per 100.

Ed. M. Burnell, South Pasadena, Cal.

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Breeder of White Leghorns, Black Minorcas and Barred Plymouth Rocks. Eggs for hatching, $2 to $5 per setting. Single birds, trios and breeding pens a specialty.

Yards at Ranch (10) Phone Main 1583
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Thoroughbred White Rock eggs for hatching at $1.50 for 15. $6 per hundred. Mammoth Bronze Turkey eggs, 20 cents each. Also a dozen choice W. R. cockerels and two M. B. gobblers for sale.

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Have for sale Trios, Cockerels and Pullets. Eggs for hatching, settings or hundreds. Write or call.

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Buff Plymouth Rocks

Winners of Five Prizes at the late Los Angeles show, the largest show ever held on the coast A few choice cockerels for sale. Eggs, $2 and $3 per 13. Write your wants.

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BARRED P. ROCKS

Eggs for hatching $1 per 13 $5 per 100 We breed from two year old hens, and the best ones of the flock only. No stock for sale. Ranch two blocks south San Gabriel car line.

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FROM
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Buff and Brown Leghorns, Buff Orpingtons, Columbian Wyandottes and Bronze Turkeys

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Eggs $1 and $1.25 per 15, $4 and $5 per 100. New stock of the Richland 200-egg strain.

C. C. Hockabout, Watsonville, Cal

Water for Chicks.

I begin by giving my little newly hatched chicks water, even before feeding them. Nice little drinking fountains can be bought at the poultry supply stores.

I prefer those that can be scoured and scalded, but I often make them myself out of a tomato can or baking powder can by making a hole with a nail in the can about an inch from the edge, then filling it with water or milk up to the hole, inverting a saucer or a small pie plate over it and holding the saucer firmly, I quickly turn it over, the water leaks through the hole into the saucer, the chicks can drink, but do not get their little bodies wet.

Or I take a tumbler, fill it with water, and invert it with a saucer, then slip a small bit of wood under the edge of glass and the water will leak into the saucer.

For half-grown chicks, a bottle can be used (a quart or pint bottle). A frame of some kind must be used to hold the bottle with its mouth down in a saucer or shallow vessel.

I find an easy way is to tack a bit of wire upon a post or the side of the house to hold the bottle upright or I put the wire inside a small box so as to keep the bottle in the shade. The mouth of the bottle should be about one-quarter of an inch above the bottom of the saucer. If you cannot suspend it in this way, bend a stiff hairpin and insert it in the neck of the bottle so that it will keep it a little above the saucer.

Water for Hens.

For the old hens, I prefer a large crock, or I use gallon or two gallon kettles. I bought several dozen of these porcelain-lined kettles some years ago at a sale and have found them very useful. I buy little sink brushes, half a dozen for a nickel keep those in the pens and scrub out my kettles at least once a day. It is very quickly done and I know that my good biddies are having as clean, fresh water to drink as I myself.

A word of warning about "irrigating chickens:" do not let the water run from one pen through the others. I knew a man who thought he had a very fine system of watering his fowls; he had a small stream of water running night and day through his pens, unfortunately he got roup into the top pen and it spread through the whole ranch; he had 3000 hens, but he had to go out of the business on account of the water carrying the infection.

I saw at Fullerton, lately, a very good plan for watering fowls, a shallow saucer-like basin with a faucet above it constantly dripping, the basin is surrounded by a little pavement of cobblestones through which the water that overflows sinks so there is no mud puddle and the fowls have a constant supply of fresh water.

Water for Ducks.

For ducks, after trying various plans, I found one that did very well. I had a barrel sawed in two. Two-thirds in one end. This two-thirds I knocked the head out of and I buried the barrel, setting the one-third part over it with the bung hole in it.

I had a broom handle, which fitted in the bung hole and every day I let the dirty water run through this hole into the bottomless barrel and it soaked away. In this way I gave my Indian Runners fresh water and a small bath every day. I found if I sawed the barrel exactly in half that it made the top part deeper than I wanted.

DON'T FEED the little chicks anything for the first twenty-four hours. Then feed them dry

West Coast Chick Feed

Bright, pure, clean, made of the finest grains, seed, meat, etc., in just the right proportion to make a full, rightly-balanced ration. They like it, too, and eat it all up clean, for it contains no waste whatever. It keeps them healthy and it will make them feather faster, grow faster and larger than will any other feed. For sale by many dealers. If yours does not keep it, try another, or send to us and we will see that you are supplied.

West Coast Stock Food Company
818 San Fernando Street, Los Angeles, California

Black Minorcas
Exclusively

Winnings at the great Los Angeles Show, January 1 to 5, 1907:

Cocks—1st and 3rd. ***Cockerels***—1st, 2nd and 3rd
Hens—1st, 2nd, 3rd, 4th and 5th.
Pullets—1st, 2nd, 3rd, 4th and 5th. ***Pens***—1st and 2nd.
Cup for Best Minorca Male, also Cup for Best Display.

Plenty of Fertile Eggs For Sale.
Send for our new illustrated catalogue.

Perham & Wheeler
R. F. D. No. 123 Lordsburg, Cal.

Beef Scraps

GUARANTEED ANALYSIS:

Protein 65%
Fat 8%

Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

Raw Bone

GUARANTEED ANALYSIS:

Protein 25%
Phosphates 45%

Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods

WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

Maud S, 1st Prize Hen, San Jose
Bred and Raised on My Ranch

Baldwin's White Leghorns

Baldwin's Leghorns are all right in blood lines and for heavy laying right straight through the year they are unexcelled. I breed nothing but White Leghorns and make them a study, aiming at quality and market value combined.

My yards are modern in every respect and I invite inspection. Think of us when you think of White Leghorns.

My best pens are made up of stock from the first prize winners at the great show at Madison Square Garden, New York, 1905 and '06.

All stock sold on a guarantee to be as represented.

Eggs, $1.50, $2.00, $3.00 and $5.00 per setting (15). Incubator lots, $6.00 and $10.00 per 100. My $6.00 eggs are from selected yards. My $10.00 eggs are from especially selected matings of my finest birds.

Send for catalogue giving full description and prices of my matings and show records.

Frank E. Baldwin *The White Leghorn Specialist*
Phone Suburban 82 46 Washington Ave., San Jose, Cal.

200-250 Egg Fowls | **WHITE WYANDOTTES** | Eggs Ready Now

10 Highest Scoring Birds, Seattle, 1907
Winning over the cream of the North Coast

Four Firsts and all the Big Specials at San Francisco
Pronounced by the National Expert Judges equal to any in the United States

1907 Catalogue and Mating List Free.
Eggs and Stock. Clears Replaced. Expressage Paid.

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A. L. R. MANTZ Rural 21, Box 98k SAN JOSE, CAL.

Mission View Poultry Ranch

White Wyandottes
That Are Trap-Nested

Prize Winning, Large Egg Laying Strain. Won Nineteen Prizes in 1906!

Mammoth Bronze Turkeys Lakenvelders
Silver Laced Wyandottes

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When writing advertisers, mention Cultivator.

How to Raise Young Chicks

The difficulties encountered in raising young chicks are numerous. Disease and lice are said to destroy nearly 50% of the annual poultry crop. Errors in diet and unsanitary conditions also help to decrease the poultry profit. But you do not need to suffer these losses if you will give poultry half the care you give other stock. Besides

DR. HESS POULTRY PAN-A-CE-A

is guaranteed to prevent and cure gapes, cholera, roup, indigestion, etc., allaying fermentation and destroying the germs of disease. By its special tonic properties it increases the powers of digestion and assimilation and compels the system to appropriate the maximum amount of food to egg production, also making the young grow fast, healthy and strong. Besides increasing growth and egg production Dr. Hess Poultry Pan-a-ce-a has special curative properties peculiar to itself. Take no so-called poultry food as a substitute. Remember that Dr. Hess Poultry Pan-a-ce-a is the prescription of Dr. Hess (M. D., D. V. S.) and bears the endorsement of leading poultry associations in the United States and Canada, and is **sold on a written guarantee.** It costs but a penny a day for about 30 fowls. Feed Poultry Pan-a-ce-a as directed, sprinkle Instant Louse Killer on the roosts, nests and into the dust bath, and we guarantee you will have no loss from disease. **1 1-2 lb. package, 35 cents; 5 lbs. 85 cents; 12 lbs. $1.75; 25-lb. pail $3.50**

Send 2 cents for Dr. Hess 48-page Poultry Book, **free.**

DR. HESS & CLARK, Ashland, Ohio.

THE PETALUMA INCUBATOR CO., Petaluma, Cal., Pacific Coast Distributors.

INSTANT LOUSE KILLER KILLS LICE.

"Sure Hatch" A Wonderful Hatcher

You can almost count your chickens before they hatch, if you use a "Sure Hatch." Our Show Window Hatch was no record breaker, but hatched ***94 strong chicks*** from ***102 fertile eggs.*** R. H. Criffield, St. David, Ariz., reports ***84 strong chicks*** from ***88 eggs,*** and all doing nicely with a Sure Hatch Brooder. We have many other reports equally as good from the 1907 ***"Sure Hatch."*** The "Sure Hatch" Brooders will raise from 85 to 100 per cent. of all strong chicks put into them. No cold corners to produce crowding, but an even temperature over the entire brooder, with plenty fresh air to produce strong, healthy chicks. Don't buy a brooder until you have seen the "Sure Hatch." You want the brooder that will raise the most chicks. See the "Sure Hatch" incubators and brooders in operation at 809 So. Main St. Send for Free Catalogue No. 25.

Anna P. Williams, General Agent

Flatiron Building **809 So. Main St.** **Los Angeles, Cal.**

Large Chicks—

As well as little ones, eat ***A. C. W.*** It is so compounded that an 8-weeks chick will thrive as well on this splendid food as the little one-day-old fellows.

The question of ***proper, rational*** feeding of chicks, old or young, is solved by the A. C. W. The very best food for ***amateurs*** to use for their flocks—it can do no harm. No bowel trouble—no over-eating—if you feed A. C. W. Chick Food, put up only in sealed sacks, by

EGG FOOD A C W IT FILLS THE BILL

The Agricultural Chemical Works

901-907 Macy Street - - **Los Angeles, Cal.**

THE FEATHERLY FARM ORPINGTONS

BUFF BLACK WHITE

Our yards are now mated for the season; containing winners of nearly 100 Prizes, Specials and Cups at California's leading shows. Our handsome Mating List and Catalog describes them all. Send for it today; it is free. Our birds are bred for utility and heavy egg production as well as beauty. All egg orders booked in rotation. Satisfaction guaranteed.

P. L. Harley, Box C, Redlands, Cal.

BUFF ORPINGTON DUCK LAYING.

We can but speak words of praise for this new variety of duck originated by the late Wm. Cook.

Ours are an imported trio, 1905 hatched birds, and were brought over from England last year; since being in our possession here in California, the two ducks, in five months, have laid 224 eggs, or a total, from the first egg laid Oct. 8th, of 248 eggs in 145 days.

The eggs have proved very fertile, and with very few misshaped eggs in that lot. The record from Oct. 8th, for that month is 24 eggs; November, 49; December. 49; then they were shown at "The Breeders' Show" first week in January, which broke them up laying; it is possible some eggs might have been laid during that period.

However, they began laying again on the 12th; laying 31 eggs in January, 48 in February, and 47 in March.

The young ducks grow fast and drakes are marketed at five pounds. If off-color or not retained to sell for crossing on Runners, will run possibly one pound lighter than good Pekins, are a larger duck than Runners and considered in England a very superior table duck.

The plumage is a soft brown, some run light in color and others dark and some shade into a blueish-gray. The color is not a true golden or orange buff as in our buff fowls. Heavy laying has a tendency to bleach out the plumage to a drab. They are very docile indeed, and will stand all kinds of rough treatment, to say nothing of a five or six thousand mile journey by boat and rail.

Mrs. Plaw of Fruitvale can attest to this also; she has imported them direct from England and bred and exhibited them for several years.

In carriage they are not as erect as Standard Pekins or Runners, but have good length of body and breadth at shoulders; the drakes have a rich seal brown head, should be free from white in any part of plumage, primaries included.

A green head or wing is a serious defect; the drakes' bills run from a dark green with black bean to a greenish horn, or orange horn color. Tne ducks have a dark horn-colored bill; are medium in size, broad and rather wider at ends.

They proved their superior merits in Australia two years running, in a competition got up by "The Australian Hen;" winning over all breeds in first season's test, and coming within 4 or 5 eggs of winning the following season. Their eggs are white, similar to Runners, and sell as readily for market. Of course our eggs are all incubated either by us or others and with good results.—A. G. Goodacre.

Large shipments of eggs are being made every day from Folsom. One of the chicken raisers finds a ready market in Tonopah, Nev., where he receives an advance of several cents over the local market price.

HOUSES AND YARDS.

We take it for granted that you have your land and will work on a basis of one acre, all to be used for poultry. Your yards should be 25x48 feet. This will give you 43 yards to one acre with 4 feet alley between yards. The yards should be enclosed with 5 foot poultry netting. In each yard should be a house 4x6 feet and also a scratching pen. Each yard will hold twenty hens; but you should not have more than 400 hens per acre if you expect to raise young stock, for at least one-half will be required for the latter. The material for a good, cheap house, constructed to house about twenty fowls will cost $6.00. The house should be 4x6 feet, built of one-half inch lumber, with gable roof, door in end and no floor. Sides of house should be 4 feet, and be raised about twelve inches, which will afford ventilation and keep the ground from getting foul. Put your roosts about one foot from bottom of house made of 1x3 inch stuff, about 15 inches apart, made so they can be removed for white-washing.

FARMERS AS POULTRY-MEN.

One of the most serious handicaps that the American farmer has to carry, is the regular annual hen strike. Just as often as the sun crosses the autumnal equinox, just so often Mrs. Hen refuses to do any more business, and leaves Mrs. Farmer with no pin or grocery money. From that time 'till the sun warms the north side of the barn, there is very little "doing" in fresh eggs, and prices soar. We are quite inclined to take this regular yearly "shut down" as necessary, and put up with it, just as we do with the high price of coal. But it's a mistake—there is no more need of suffering that loss than there is of standing any other sort of "bunco" game. Mrs. Hen can be made to understand and do her full duty, if you do your duty by her. Did you ever observe our hens closely during this "off" period? If not suppose you do, next time it occurs. You will find them dull, listless, logy and slowly shedding their feathers. Now moulting is a natural and necessary period in the round of the hen year, but it need by no means be a time of total loss, and if you intend to get your share of the profit sure to come from a constantly increasing demand, you must cut this non-productive period down as much as possible.

The proper thing to do with hens in order to avoid this lost time is to give regularly a small amount of Dr. Hess Poultry Pan-a-ce-a in the morning feed. I do not hesitate to say that there is nothing so well adapted to the poultry-man's need, as this preparation. Dr. Hess studied every possible phase of the "hen problem" by scientific research and careful experiment under just the conditions which poultry-men are compelled to meet, and Poultry Pan-a-ce-a is the result.

If you are not acquainted with Dr. Hess Poultry Pan-a-ce-a and what it does, let me say first—it is not a stimulant; it does not excite the hen to an unnatural and artificial production of eggs. It does, however, compel every organ to act in a natural and healthy manner by causing the hen to digest and assimilate the largest possible amount of food taken, so that laying becomes a fixed and constant habit. Poultry Pan-a-ce-a makes rich red blood and supplies the nitrates necessary to assist in throwing off poisonous matter from the system, so that health becomes a natural condition in confinement as well as in liberty. I do not hesitate to say that no flock can be diseased when Dr. Hess Poultry Pan-a-ce-a is regularly given.

If this course is begun with young chicks and followed consistently every day, growth will be rapid and loss practically nothing. I have known pullets handled in this way to begin laying in October and continue productive through the entire winter, and as I said before it shortens the non-productive period for old stock. Dr. Hess and Clark are so certain of the value of their Poultry Pan-a-ce-a that they give a written guarantee with each package; if it does not give results, it costs you nothing. One cent's worth of Poultry Pan-a-ce-a will make it a daily feed for 30 fowls. If you use it as directed, and occasionally sprinkle roosts and nest boxes with "Instant Louse Killer" your success will be ample.

Chamberlain's Perfect Chick Feed

World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This is the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

NOTHING JUST AS GOOD.

GERMAIN SEED CO.,

Pacific Coast Agents. **LOS ANGELES, CALA.**

SPECIAL PRICES ON TON LOTS.

National Irrigation Congress

The Fifteenth National Irrigation Congress, which will be held in Sacramento, California, September 2-7 next, will be a very important and valuable session. The people of Sacramento are already making preparations for the event. A managing committee or Board of Control has been created, and office established and the work of providing for the comfort and entertainment of visiting delegates is well under way.

Plans and Prizes.

The plans for the event include an Interstate Exposition of Irrigated Land Products and Forestry, in which all states having Irrigation and Forestry interests have been invited to participate. It is announced that handsome trophies and prizes will be offered for state and individual exhibits of all kinds of irrigated products, also for exhibits of forest products and minerals.

The National Irrigation Congress is composed of delegates representing Farmers' Clubs, Irrigation Societies, Chambers of Commerce and other organized commercial bodies, cities, counties and states. The meetings are held annually and are attended by delegates from all parts of the United States. Among those who attend are United States Senators and Congressmen, Governors of states and other high officials of National and State Governments, as well as practical farmers, irrigators, stockmen and lumbermen.

Purpose and Place.

The purpose of the Irrigation Congress is to promote the development of wise and beneficial National Irrigation and Forestry policies, as well as to provide for discussions of practical details of Irrigation and Forestry. Great and valuable results have followed the work of the Congress in the past, and with the growing importance of and increasing interest in National Irrigation and National Forestry, still greater importance attaches to each succeeding session.

Railway companies have been asked to make special rates of fare, and special freight rates for exhibit materials intended for exhibition at the Interstate Exposition, and it is expected that extremely low rates will prevail. Sacramento, where the Irrigation Congress will be held, is the capital of California, an important railway and commercial center, but chiefly important from an agriculture standpoint by reason of the fact that it is located in the heart of the great valley of California, within which lie the greater portion of the farming lands of the state. A thousand-mile excursion through this great valley is a part of the plans for enabling delegates to see California farming and California irrigation.

Some grapevines have been killed —apparently by too much water.

IRRIGATION BY SPRINKLING.

Irrigation by sprinkling is a method which, so far as the writer knows, is not pursued for any commercial purpose in the irrigated regions of the country. It does, however, sustain itself on the ground of commercial advantage in the Eastern States, as has recently been shown by Professor Vorhees, and the data which he presents should be carefully considered by those who contemplate recourse to irrigation as a protection to high value crops against occasional deficiency in summer rains.

Orchards and vineyards are killed by over-irrigation, because of the raising of the water level too near the surface.

Columbus Engines

Have Stood the Test for 16 Years

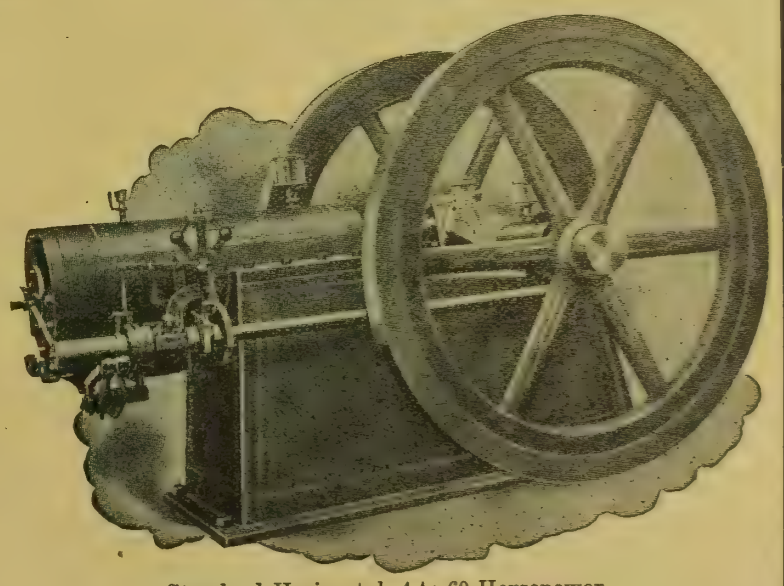
Gasoline or Distillate

Made by Columbus Machine Co.
Columbus, Ohio

3½-horse Vertical, $165, 1200 lbs.

Points of Excellence

Simplicity. Highest Efficiency.
All parts easy of access.
All wearing parts adjustable.
Long life of battery and electrodes.
Poppet Valves with removable seats.
Valves operated mechanically and not by suction.
All valves thoroughly water-jacketed.
No delicate parts to get out of order.
No unnecessary compression.
Closest regulation of speed.
Highest grade of material.
Best of workmanship.
Exhaust Valve opens against atmospheric pressure only.
Interior so located that fresh gas and air pass over the electrodes for each charge.
Change of speed while engine is running.
Can take up its load on any revolution without waiting to complete its cycle.
Explosion head cast solid with cylinder and no packing joint to blow out.



Standard Horizontal, 4 to 60 Horsepower.

Columbus Portable, 4 to 30 Horsepower.

We make a specialty of Installing Pumping Plants Complete.

Come in and see us or write.

THE object of the manufacturer has been to provide a simple engine, free from all complicated and trappy devices, which are constantly getting out of order, and are more difficult for the inexperienced user to understand and keep in adjustment.

AN ENGINE constricted of the very best material, equally adapted to use gas or gasoline.

AN ENGINE which does not compress or make an electric spark when not required, thus saving the exertion of the fly-wheels and prolonging the life of the battery and electrodes.

AN ENGINE so arranged that the speed can be changed while running.

AN ENGINE with the closest regulation, accomplished by an extremely sensitive governor, aided by heavy and properly proportioned fly-wheels, properly balanced and built in strict accordance with mechanical principles.

Greenleaf-Compton Company

121 South Los Angeles Street
Los Angeles

Save Money on Your Incubator and Brooder

Our special season-end offer is the most attractive proposition we have ever made.

"Old Trusty" Incubator and Success Brooder

Are the best machines on the market. **Buy now** before our stock is exhausted. Send for 100-page catalogue and special **Trial Offer.**

Write today—This is your opportunity.

McClanahan Incubator Co.
709 S. Main Street, Los Angeles

WHITE MINORCAS

Won at Alameda Poultry Association Show, 1907: 1st Cock, 1st Hen, 1st Pullet

EGGS FOR SALE—$2.50 per Setting of 15; Two Settings, $4.50; Incubator Lots $10 per 100.

White Minorca Incubator Chicks For Sale, Price 20c. Each.

A Few Cockerels For Sale. Prices on application to

Coulson Poultry and Stock Food Company
Petaluma, California

BARRED PLYMOUTH ROCKS
Ocean Blue Strain

We have been offering you eggs, now we offer

Our 1907 Breeders

All of them, without reserve. If you don't believe the Ocean Blue Strain are all we claim try a pair, trio or pen and prove it. We are going to give you a bargain sure in these breeders. Females coming 1 and 2 years old. Males 1906 hatch and we are only going to ask you from $1.50 to $5.00 each for them. Now get busy, don't wait too long. Eggs half price balance of season and they are hatching fine.

Mr. and Mrs. D. T. Wieland, Moneta, Cal.

Take Redondo car, Second and Spring St., via Gardena, get off at Illinois St., right on the ranch.

White Wyandottes Exclusively

I have purchased the entire flock and good will of the

UNIQUE POULTRY FARM

have carefully selected the best of this flock, which in connection with my own gives me the best lot of birds on the coast. If you want eggs from prize winners that will produce prize winners— write me. Eggs $2, $3, $5. Incubator eggs as gathered from yards $6 per 100. Special matings, $10 per 100.

W A. SEYMOUR 470 N. Beaudry Ave. Los Angeles, Cal.

Salt Lake Route

Is Again

Open For Business

and your patronage is solicited for this scenic short line to

SALT LAKE CITY AND EAST

Two daily trains with

Through Sleeping Cars

To CHICAGO, ST. LOUIS, ST. PAUL, KANSAS CITY, OMAHA, DENVER and OGDEN

Full particulars at all ticket offices of the

SALT LAKE ROUTE

LEE'S LICE KILLER

Henry Albers Co. 315 South Main Street Los Angeles

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

Setting Turkey.

I have a turkey hen just beginning to set on twelve of her own eggs. Will you please give me some information in regards to caring for her during the setting period? She and her eggs are in a covered box of straw. I have been told all eggs, chicken or turkey, should be placed on the ground, but knowing how contrary a turkey is, I am almost afraid to go near enough to feed them lest she will leave her nest.

When I found she was laying, and in this box, I never went near her, but left the eggs in the box as she would lay them. Since she commenced to set I have never bothered her in any way. Shall I continue to leave her and the eggs just where, and as they are?

How long does it take a turkey hen to hatch, and will you please tell me what to feed the babies for the first few weeks, should I be fortunate enough to get any.

Will it be advisable to keep them under cover or partly in the open?

I secured this hen and five babies last spring, but I lost two of them and I want better success this year, hence this letter to you.

I am thinking of purchasing a few pigeons for family use. How many and what breed would you suggest to supply squabs for a family of four? —W. L. L., Pasadena.

Turkeys are usually very good and close setters; you need not be afraid of her deserting her nest that she has chosen herself, and I would advise you to leave her where she is most likely she will hatch every egg, keep food, corn or rolled barley, near her, and also water for her to drink and spade up a place for her to dust herself every day.

Go near her every day and speak pleasantly to her and give her a little bit of bread or lettuce in your fingers so she will get to know you as her friend.

Turkey eggs take twenty-seven or twenty-eight days to incubate. I have written so recently in the Cultivator on how to raise turkeys that I will not repeat it here. Hard boiled eggs chopped finely shell and all, with equal amount of bread crumbs, and an onion every day are the principle food and always a pinch of coarse sand and one or two lettuce heads, and above all, do not over feed.

About squabs: Homers are the best, healthiest, and most profitable for family use. One pair of Homers will have from six to eight pair of squabs every year. How many do you want to eat?—Mrs. A. B.

Troubles of a Turkey Raiser.

I have been losing my little turkeys; I do not know the cause, tho' probably you could help me.

They die between three and four weeks old; their trouble seems to come on all at once, their wings droop and they shake as tho' they had the ague, at first; still they have a good appetite until they are past going. I usually find them this way in the morning and they die the same day.

I brought one in yesterday that would stand and cry and after crying would throw its head up and make a peculiar noise.

Last year I followed your direction in raising turkeys and did not lose any, so I can't understand this year what is the trouble. I thought yesterday that probably the gravel was not coarse enough, so changed it. Please reply as soon as convenient.—Mrs. O. S.

Little turkeys are at first quite delicate little things, and a small thing will affect them. If you are feeding and watering them according to my plan, we may know that the trouble is not in their food and must look elsewhere for the cause. Usually when turkeys droop their wings it is because their lungs are affected, they have taken cold.

Do you have fogs and damp grass for them to run in? Are they sleeping in a draught? Do they have the good, big wings of a turkey hen to cover them? Or how are they sheltered? Are they sleeping on damp ground? Have they lice? You see I do not know the circumstances, so find it very difficult to guess at the cause. A friend of mine had little turkeys that were dying with almost the same symptoms as yours. They were under olive trees that were irrigated, and the turkeys, from being in the shade and on damp ground, took cold and were dying just as yours are.

I do not know if you have fogs in your part of the country or heavy dews or if you have been irrigating. You will have to find out for yourself what is giving them cold, and remember that if they have lice they will take cold very quickly. The lice will give them a cold in the head and that goes easily to the lungs at the first chance.

A Nervous Trouble.

Will you please tell me what to do for my little turkeys? I am hatching them under chicken hens and commenced feeding them when they were 36 hours old with hard-boiled eggs and about the same quantity of bread crumbs moistened so as to swell, and chopped onion tops and whole heads of lettuce.

They have plenty of fresh water and I keep them in the brooder-house so as to keep them dry and warm. The hens are still with them as I have no heater in the brooder-house at present.

I have looked them over for lice but fail to find any.

I had 18 hatch out about a week ago; there are 13 left and they are nice and lively.

Those that died would commence by staggering, and shortly they would throw their heads back and go backwards cheeping as though in pain. One commenced before it had eaten anything, so I am at a loss to know what to do for them.

We have taken the Cultivator for 3 years, but am unable to find the above symptoms described in any of

For a Good, Practical Milking Machine see the O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

the papers at hand.—E. P. M., Pasadena.

The staggering back that you describe in your little turkeys is a nervous affection. It comes from either poisoning or from sunstroke, from indigestion, or from the eggs not being properly turned during incubation. I think your trouble comes from your keeping the little turkeys inside the brooder-house. They require to be out of doors in the fresh air much more than do chickens. Let them get out on clean, freshly-turned earth, or better still, on your lawn, keeping the mother chicken hen in a coop so that she will neither damage your lawn nor scratch and knock over the turkeys whilst they are too little and inexperienced to get out of her way.

Do not soak the bread. It is better to give it to them dry and let the gastric juice in their crop soak it up, and help digest it.

You say they have no lice. Better be sure of it, staggering is one symptom of lice. Get some buhach and rub it into the down on their head and neck, and watch for the lice to fall out in about five minutes.—Mrs. A. B.

IRRIGATION IN SAN DIEGO COUNTY.

Continued from Page 419

an aerating table and through a pressure filter, so that the quality is well-nigh perfect when delivered to the city.

4. Above one of the side tributaries of the Lower Otay, is the Upper Otay reservoir, which holds about one billion gallons and is now full. The water in the Lower Otay floods back to the base of the Upper.

Water could be taken from the latter by a separate pipe line to serve higher levels, but at present it is simply held in reserve and can at any time be run off into the Lower Otay.

When both the Barrett and Moreno dams are completed, the total capacity of the four reservoirs will be sufficient for every possible need of all the country, which can be served by them, and in that event no part of this state will have a better or more certain water supply than San Diego and its surrounding country.

At Bonita, in the Sweetwater valley, where the pipe lines of the Sweetwater and Spreckels systems cross, arrangements are made by which they can be joined so that the Sweetwater system could in time of need be supplemented by that of the Southern California International Water Company.—R. C. Allen, Bonita.

PRE-COOLED ORANGES.

On Wednesday, April 17th a Cultivator representative visited Uncle Sam's experimental plant for the pre-cooling of packed cars of fruit, situated on the river bank in the city of Los Angeles, being one of several in Southern California in charge of Mr. G. Harold Powell, whose name is familiar to all our readers.

The investigations of the United States Department of Agriculture into the cause of decay in oranges in transit are on a much larger and broader scale this year than in former years. They include:

1. Experiments in about thirty-five packing-houses in all parts of the citrus belt to bring out the effect of handling the fruit in different ways. Some unbrushed, dry brushed and washed fruit, mechanically and commercially packed fruit, injured fruit, is left in the house two weeks, then examined in the presence of growers, shippers and packers. Nearly 100 tests of this kind have been made and the results show that the fruit as it comes from the tree seldom decays and that the allowance of rot increases in proportion to the amount of handling the fruit receives unbrushed sound fruit decays least, brushing raises it to a greater or less degree washing increases it still more, and the mechanically injured fruit rots the most.

2. The shipment of sound brushed and washed fruit, commercially packed fruit and mechanically injured fruit at different lengths of time after packing, and shipped under ventilation, icing, and pre-cooling, followed by icing. About 100 cars have been shipped to date and 50 more will be forwarded. The results are as clear cut as a problem in geometry, the decay increasing in proportion to the amount of handling the fruit receives and the time elapsing between packing and shipping. It also varies directly with the temperature; the fruit decaying least in the pre-cooled cars.

3. The determination of the keeping quality of oranges handled in different ways and shipped under the three methods after the fruit arrives in the eastern market.

The government representatives have been working on the breeding of deciduous and citrus fruits for several years and are now cooling several cars a week in warehouses at Pasadena and at Riverside, and with an air circulating system at the Los Angeles Ice and Cold Storage Company's plant at 7thst. and Santa Fe tracks.

This Los Angeles plant was constructed by Mr. S. J. Dennis, an expert in refrigeration on the Department staff, for the purpose of securing technical data on the practicability of cooling oranges in cars by forcing cold air through the car. The plant consists of a 30-inch insulated duct leading from an ammonia coil room to one end of the car, a similar duct returning from the opposite end of the car to the coil room, two large fans to force the air through and return it, and a series of valves, which make it possible to circulate the air through the car in either direction. Mr. Dennis is securing data on the amount of refrigeration required, the temperature of the air entering and leaving the car, the volume and rapidity of circulation and the temperature of the air and of the fruit at different parts of the car. At the end of the season, data will have been secured that will determine the value or impracticability of this system of refrigeration.

Mr. Powell has associated with him a half-dozen of the ablest scientists in the country, Messrs. Stubenrauch, Tenny, Eustace, Hosford and White, experts in fruit storage and transportation and Mr. S. J. Dennis, a refrigerator engineer.

THE STOVER STILL FORGES AHEAD.

Now that the season for artificial irrigation is again approaching and the quiet country solitude will soon be broken by the muffled reports of the gas-engine, it is well for the farmer to turn his attention to the merits of these same gas-engines so that when the rains are really over and the ground begins to bake with the summer heat, he will not be found as were the foolish virgins of Scripture, with their lamps untrimmed at the eleventh hour.

Anticipating the rapid approach of summer, Livingston & Lee, Southern California agents for The Stover Gas Engine, report that they have two carloads of engines arriving next week which will put them in a position to furnish anything from 2 H. P. to 40 H. P. at once.

The rapid strides, even through the winter months, of this simple engine have been so very satisfactory that the firm has secured additional capital to further push the sale of The Stover and this summer expects to touch fields they have not done before.

They have so enlarged their quarters that in addition to retaining their old sales-room and office on N. Main street, they have established a warehouse and yard at 1310 San Fernando street, where they intend to install machinery to make their own pump fittings, build pump frames and do all work in connection with installing up-to-date pumping plants.

The main points of superiority of The Stover are its simplicity and its great power. Its speed regulating device also appeals to many.

Take it all and all there is no engine on the market today that is better calculated to meet the requirements of the farmer than The Stover and it is well worth any farmer's time to pay a call on Livingston & Lee at 953 N. Main street, Los Angeles, and see one in operation.

USED CAUSTIC BALSAM

Lovelock, Nev., Nov. 15, 1905.
The Lawerence-Williams Co., Cleveland, O.:

Kindly send me your descriptive circulars, describing GOMBAULT'S CAUSTIC BALSAM. Have used the Balsam with much success, by following the directions coming with each bottle. G. S. WEBB.

Poultry Supplies and Seeds of All Kinds

Pacific Incubator Company

has opened a store in Los Angeles for the sale of

Incubators Brooders

and a full line of

POULTRY SUPPLIES

New, fresh stock at the lowest prices. Come and see us or send in your orders.

Before buying you should see the

"Business" Incubator

Capacity 100 eggs, $10 delivered. Hot water, copper boiler, nursery, Best Sheer Regulator; everything the best. No mahogany, no frills, no furbelows. Also,

"Business" Brooder at $7.00

Not a box, but genuine brooder.

The "Business" is built for business, and it does the business every time. Come and see it.

707 So. Spring St., Los Angeles

The Only Proof of an

INCUBATOR IS WHAT IT WILL DO

The wide-spread success of Glendale Incubators and Brooders is due to the fact that these machines actually overcome the objections of older makes. They are a distinct improvement. They give so much better results, require so little attention, and do this work so perfectly that no poultry man who stops and figures out the matter on a dollar and cent basis can afford to use any other kind.

If you will investigate, if you will ask your friends, if you will come and see the points of difference, the improvements, you will get in line and use Glendales.

The manufacturers give a positive guarantee of money back if not satisfactory.

One big poultry dealer, who is recognized for his keen knowledge of the business says: "I have tried every first-class incubator and brooder on the market, and the Glendales certainly are a revelation to me. They deserve the support of every poultry man for they are certainly built on honor and do their work well."

The 120-egg size, $22; 240-egg size, $32; 360-egg size, $42; 500-egg size, $52.

We want you to attend a free demonstration now being conducted. If this is not convenient, write for catalogue.

Johnson & Musser Seed Co.
Dept. 8
113 No. Main St., Los Angeles

White Wyandottes

These are pure white, hardy, fine layers, carefully selected. Eggs $1.50 per setting.

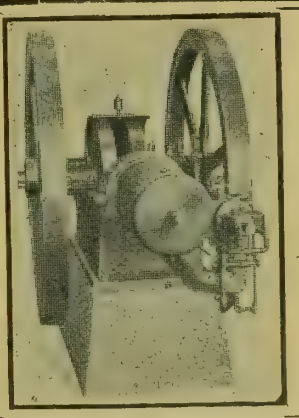
Buff Cochins

Simply unexcelled as to shape, color and feathering. More prizes won than by any other western flock.

Special Mating, eggs $5, Others $2

Nothing but the very finest. Several fine cockerels, $5 each. Write for full description of them.

Harry McIntire, San Diego, Cal.
Runt-Homer, and Hen Pigeons



Olds...

Gas and Distillate Engines and Power Spray for Orchard Work

HARRISON MACHINE WORKS

Los Angeles Agents

717-21 North Main Street

CALL AND SEE US

COMPRESSED AIR MACHINE COMPANY
California Jobbers *Jessie near First St.*
San Francisco, Cal.

CUT IT OUT NOW (THIS ADVERTISEMENT)

NATURAID

THIS IS THE KEY — NATURAID — TRADE MARK — THERE IS ONLY ONE DISEASE BLOOD CONGESTION AND BUT ONE CURE CIRCULATION

Health Utilities Co.

(Successors to Adolph Petter)

217 Mercantile Place, Los Angeles, Cal.
Home Phone A7102

We embrace every utility and method for **first preserving** the **health** and also for regaining it when lost.

All sorts of health utilities in our

Naturaid Store

Rupture Cure
Long List of References.

Trusses
Not the "Hit or Miss" Kind. We actually make Fifteen kinds. Hold or No Pay.

Elastic Stockings
Made to Order Only.

Deformity Apparatus
The Naturaid Sort.

Abdominal Belts
Eight Kinds.

Suspensories
Ours Are Different.

And all Sick Room Supplies. In our **Institute** we Treat All Sorts of Diseases by Naturaid Methods.

Dr. Adolph Petter, M. N. E., General Manager

We have methods for fitting by mail as well as personal application

Building the Irrigation Ditch

Having decided upon the point of diversion and located the ditch line, the farmer is ready to build the ditch. Experience in making drain ditches will help in this.

But there is this difference: Drain ditches must be kept in the ground as deep as practicable, while irrigation ditches must be kept as near the surface as may be, in order that the water can be easily taken out. The line of the ditch should first be marked by a furrow. To do this, let one man guide the team, walking between the heads of the horses, holding a bit in each hand, while another holds the plow.

If the surface of the ground is such as to permit a wagon to pass along the line, the plow may be attached to the rear axle, the driver directing the team from the seat of the wagon. The furrow should be turned to the lower side of the ditch. If the surface of the ground is comparatively level across the line of the ditch, it is not necessary to follow the stakes closely in the bends. The ditch will be better for being straightened a little, which may be done by going above the stakes that locate the bends nearest the stream and below the stakes farthest away.

If the ground slopes very much across the ditch line the stakes must be followed closely. After the line is marked, two or three furrows are plowed, all being turned to the lower side. A farm ditch can be made almost wholly with an ordinary plow by going over the line a number of times. The loose earth in the bottom of the ditch may be removed with a scraper or shovels.

A small stream can be easily diverted into a ditch, if it is running in a shallow bed, by a cross-stream dam of posts and plank, of posts and brush, of brush and rock or cobbles, etc. Such structures are not usually water-tight, but they will raise the water to the level of outflow into the ditch which is to carry it to the land to be irrigated or to the reservoir from which it is to be distributed. A better dam, either of masonry or of earth, made water-tight by a puddle bar of clay, may last for a long time in a small stream if adequate arrangements are made for the passage of waste and flood water.

Raising a small stream in a deep bed requires a dam of greater strength. In such cases it is safer to make the dam of timber or masonary arching upstream, bedded well into the banks, and puddled well above with clay, to prevent leakage, which would soon undermine and carry down an otherwise good structure. Such a dam will cause the bed of the stream above it to fill with sediment, which will reduce the direct pressure. The beginner, however, will do well to err on the safe side, if at all, and make his dam twice as strong as might seem on first thought to be necessary.

In a wider stream in a shallow bed enough water can often be diverted by a wing dam, starting just below the head of the ditch and running obliquely up the stream toward its center. Such a dam can be easily constructed of posts and brush, or of any coarse, heavy material which is ready at hand or most cheaply secured. It raises part of the water sufficiently for outflow into a ditch and is not enough of an obstruction to be torn out in high water, or, if the dam is partly destroyed, it can be cheaply replaced.

Courtesy Hawley, King & Co., Los Angeles

Twentieth Century Grader

Doing work of plow, digging up sod preparing to make gutter. It will establish a graded, curved form of road so that it will shed water easily

IRRIGATION POINTERS.

Summer irrigation promotes a root system near the surface and proper development of fruit on trees with such a system of feeders requires irrigation. In other words, an orchard once irrigated will suffer more from drought than one never irrigated.

In low places, especially where the ground water is too near the surface, irrigation has had bad effects. Fruits have not such good flavor, grapes are late, and sometimes trees are killed.

Orchards have been killed outright by constant irrigation by Chinamen growing vegetables among the trees.

The Home of a Plant-Lover

PARTLY HIDDEN by wide-spreading pepper trees on beautiful Villa street, Pasadena, is the comfortable and cozy home of a plant-lover who, in a quiet way, has done much to raise the standard of horticulture in California. New plants have been introduced and acclimated, then distributed. Still more, where nature had failed to round out to its fullest and give what he knew could be secured by meeting nature on her own ground, there he bent his energies to secure the highest nature had to give.

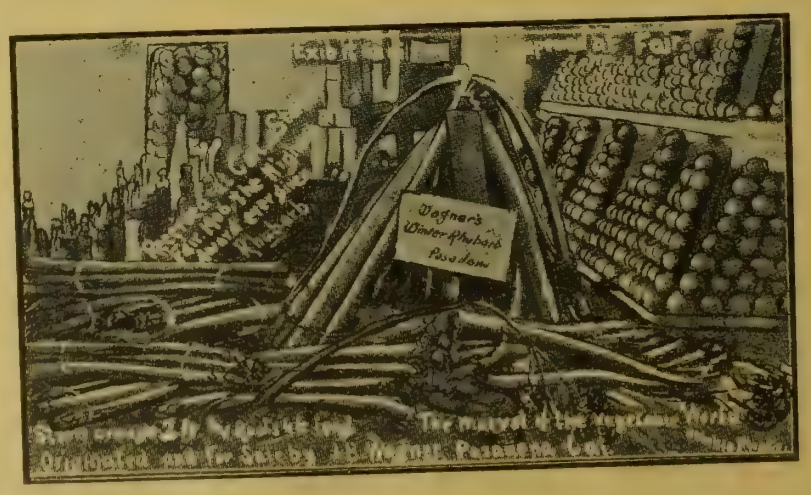
The home interior shows by its tasty arrangement the refinement, which reigns there. Music-lovers as well as plant-lovers, usually demand refined surroundings. These are all seen in this home—the home of J. B. Wagner, the "Rhubarb King" of California.

We do not know that he is the largest producer in a marketing way, but in the production of better varieties and in creating greater wealth-producers he is the peer of any who have had to do with rhubarb.

In a quiet way this has been known to many of Mr. Wagner' friends, but only recently has the public been made aware of the effective work which is being done in the little experimental plot at the base of the Sierra Madres.

An exhibit of this rhubarb was made at State Fair at Sacramento, and attracted large numbers of people to the booth, where Mr. Wagner gave information to all inquirers. Among those inquirers was the party of Governor Pardee, who expressed great satisfaction in the fact that such rhubarb could be produced in this State, which has a reputation of being a poor producer of rhubarb on account of its arid condition. This large exhibit, a photograph of which appears on this page, was made up entirely from these first plants which Mr. Wagner secured from the seed of the Crimson Winter Rhubarb, hydridized with the Lorenzo. At the display made at the fair, the size and the length of the stalks was not the only form in which it was exhibited; for Mr. Wagner also showed the quality of sauce made from it to be the equal in every way to the Crimson Winter. We say the equal in every way, though some prefer the coloring of Crimson Winter to that of this hybrid; for it is not quite as deep a red as its parent. In flavor and in lack of any "rag" it is fully the equal of the Crimson Winter.

The flavorable comment won at the fair, together with Mr. Wagner's own knowledge of the worth of this plant, might be thought to settle at once upon it as worthy of the widest propagation and distribution; but there is one other factor to be determined before he will consent to spreading it broadcast over the land. This factor is: "Will its admirable qualities be conveyed to its offspring—will the seed come true?" This experiment will require some time to settle to Mr. Wagner's satisfaction. From the limited experiments which he has tried, he is most hopeful that it will have this quality to the extent of the Crimson Winer; and if it does, it will certainly become at once a favorite to a far greater extent than has the Crimson Winter. For with the admirable qualities of size and flavor is the added advantage of less seed stalks than the Crimson Winter; consequently more of its vitality goes to the "fruit" or edible stalks.



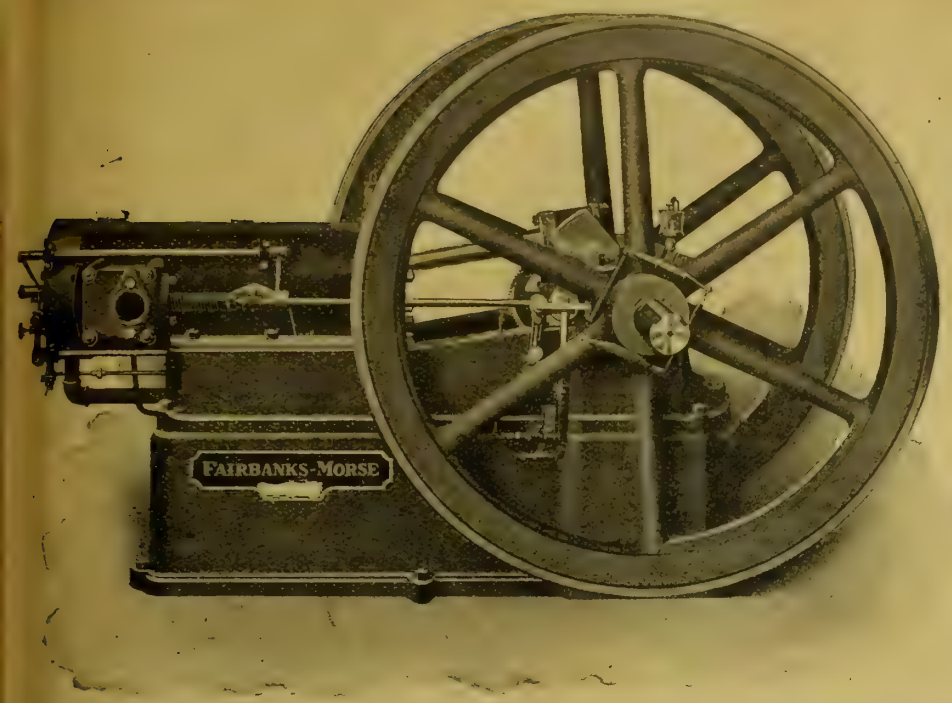
Mr. Wagner has such unbounded faith in his rhubarb that he has been sending out stock to grow on shares. That is, those who had any doubt about the profit end of the business could get stock free of charge for planting on an agreement to give Mr. Wagner a share of the first, second or third year's crop, or all three as as agreed upon, for Mr. Wagner has backed up his faith and convictions regarding this wonderful rhubarb by allowing a large number of growers to take stock on practically their own terms.

So many have availed themselves of this generous offer that Mr. Wagner announces that his stock is almost sold out, and that he has only reserved enough high-class roots to meet the present season's demands. So popular has this rhubarb become that this necessary stock for a trade supply is very large and if any remains unsold it will be planted on the home grounds.

Those anticipating planting this season, and everybody should do so who has not, will do well to get their orders in at once, for now is just the favorable time to plant to get those surprising results for next winter that has marked the growing of this rhubarb wherever it has been introduced.

Many experiments have been made with growing this high-class rhubarb to find out just the best time to plant for the greatest possible success. Mr. Wagner has, in his usual thorough manner, carefully noted down every planting made for several years and has found that the months of April and May are the best to insure heavy crops next winter, beginning just as all fresh fruit and vegetables are going out of the market and an active demand springs up for something fresh, succulent and appetizing. Thus, it will be seen, that the time to order is now.

Mr. Wagner is worthy of highest commendation for his indefatigable research. May he secure highest success.



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Distillate and Crude Oil

IRRIGATION PLANTS OUR SPECIALTY

Portable Engines

For All Kinds of Ranch Use

Special Electric Engines

For Electric Lighting

Fairbanks - Morse & Co.

Los Angeles

San Francisco Portland Seattle Spokane

MEASUREMENTS OF SMALL STREAMS.

Before discussing sources of supply it is important to cite a method by which the quantity of water available in a small brook, outflow from a large spring, or discharge from a drainage system may be easily ascertained.

Without an estimate of the supply, reservoir building or the determination of the area which can be irrigated is merely guess work. Recourse to the miner's method of measurement is best for such sources as will frequently be drawn upon for the farm supply. It consists in causing the water to flow through an opening, the capacity of which is known, and which is readily capable of adjustment to the flow in any case.

A simple form of this device is a board 1 inch thick, 12 inches wide and about 8 feet long. The opening is 1 inch wide and 50 inches long, and the distance from the top of the board to the center of the opening is exactly 4 inches on the upstream side. On the downstream side the opening is beveled so that the hole presents sharp edges to the stream. A sliding board is hung upon the top of the first board with a strip screwed along its upper edge, this sliding board being wide enough to cover the opening on the upstream side. In the slot there is a closely-fitting block made to slide on the beveled edges, and fastened by a screw to the sliding board. It is obvious, then, that when the sliding board is moved backward or forward, by means of its end, which is extended for a handle, the block moves in the slot and determines the length of the opening.

In operation the board is placed in the stream so as to dam the flow completely, and the sliding board is moved backward or forward until the water is all passing through the slot, the water being kept up to the top of the board, or 4 inches above the center of the opening. The length of the opening measures the number of miners' inches of water flowing through. If the flow is too great to pass through the opening 1 inch wide the opening may be made wider, the water still to be kept 4 inches above the center of the opening. The laws of several states provide that in devices for measuring water for sale by the miner's inch the opening shall be 6 inches high, and shall be provided with a slide. The number of miners' inches then discharged is equal to the number of square inches in the opening.

The assumption made that the discharge is proportional to the size of the opening is not true, but the error in measuring small quantities is not great enough to be taken into consideration. By converting the results of measurements in miners' inches to gallons, cubic feet, or some other familiar unit, it may be determined how long it will take the stream to fill a reservoir or cover a given field with the necessary depth of water. This unit is readily convertible into cubic feet or gallons or acre-inches of water, according to the time the water flows.

SAN JOAQUIN ARTESIAN BELT.

Where so many natural advantages are to be found coupled with such abundant fertility of soil, it is not strange that means should be sought to supply any deficiency of moisture that might occur from time to time and thus to render crop production a matter of inevitable certainty from year to year.

But nature has been lavish in her gifts to this region. This valley is situated in the greatest artesian basin known. Just underneath the thousands of square miles of land comprising this valley lies a sheet of water under such a head of pressure that when pierced by the drill of the engineer, a fountain of water rushes out with such force that it rivals the mechanical possibilities of a huge Corliss engine and with sufficient volume to create and sustain lakes and flowing streams.

Too much water with poor drainage will sour the soil and cause gum disease and yellow leaf.

$3.50 WILL BRING YOU THIS

A REVOLVER EVERY FARMER SHOULD OWN

Hopkins & Allen "WILD WEST" REVOLVER

POST-PAID BY MAIL

32 or 38 Calibre

6 Inch Blued Steel Barrel

Write for our Big New "Gun Guide and Catalogue" for 1907. It's free and the best and most interesting Firearm Catalogue published in America. Offers best prices.

HERE'S A REVOLVER THAT OUGHT TO BE IN THE POSSESSION OF EVERY FARMER IN THE COUNTRY. It is especially designed for the farmers use—long range shooting and extra thorough protection. With it you can get at the night prowler in barnyard or chicken lot without coming to close quarters with him, and the blued barrels keep the sights clear in the moonlight giving you double protection against the foe.

DESCRIPTION: This revolver is specially constructed for farmers use, of high-grade material throughout, **and is warranted to give extra good satisfaction. Barrel and cylinder** are made of best blued revolver steel, drop forged, with our popular improved quick twist rifling, which **increases velocity and improves trajectory. Cylinder** is supplied with ratchet stop and counter-sunk pinion giving rapidity of action and extraordinary accuracy. **Frame** is made of Blued Steel and all lock work of high-grade spring steel. **Hammer and Trigger** are made of fine drop forged steel, **case hardened**; hammer rebounds after firing—never resting on cartridge except at the instant of discharge. Revolver is **Double Action,** self-cocking with hard, checkered rubber handle, pistol shape, which fills the hand and gives an excellent grip. 32 Calibre, 6 shots, 38 Calibre, 5 shots. ALL IN ALL, THIS REVOLVER IS EXTRA HIGH-GRADE FOR THE PRICE, AND FOR FARMERS USE IS SUPERIOR TO MANY OTHER REVOLVERS COSTING TWICE THE MONEY.

IF YOU SHOULD NOT FIND THE "WILD WEST" REVOLVER AT NEAREST HARDWARE STORE SEND $3.50 DIRECT TO US, AND WE WILL FORWARD IT AT ONCE, POST-PAID BY MAIL WITH AN ABSOLUTE GUARANTEE OF SATISFACTION, OR IMMEDIATE REFUND OF MONEY. Same Revolver, 4½ in. barrel, $3.25, 2½ in. barrel, $3.00. Mention Calibre wanted when ordering.—Write us at once.

THE HOPKINS & ALLEN ARMS CO. 121 FRANKLIN ST., NORWICH, CONN., U. S. A.

Largest Manufacturers of High Grade Popular Priced Firearms in the world. European Office: 6 City Road, Finbury Sq., London. Makers Celebrated H. & A. "Scheutzen" and "Junior" Rifles, "Military" Repeating Rifle, etc.

Does this stream of water look good to you?

It certainly does to the two men standing beside it. They are the President and Treasurer of the company to whom the plant belongs.

It is raising 40 inches of water from 250 feet below where they are standing. This water goes into a reservoir 18 feet above the pump through an 8-inch pipe-line about one-eighth mile long and you cannot see a pulsation in the discharge if you try. It has been doing this for over a year. There have been no repairs, not even new leathers, and it runs better, if such were possible, today than it did a year ago.

How many pump users can say this?

It shows conclusively that it pays to install good machinery.

We have done this for these people and we can do it for you if you give us a chance. Our catalog tells all about it. Mail us a card asking for it today.

POMONA MANUFACTURING COMPANY

Corner of Bertie and Gibbs Streets POMONA, CAL

LINERS

DUCKS.

INDIAN RUNNER DUCKS—A WORLD beater for producing Eggs. Pure strain. $1.00 for 13; $5.00 for 100. Black Langshans, Prize Pen. $2.00 for 13. F. M. BENDER, Corona, California.

BUFF ORPINGTON DUCKS—248 EGGS IN 145 days from our two imported ducks. Eggs $3 per doz. Nothing better to raise. GOODACRE BROS., Compton, Cal.

PEKIN DUCKS—STOCK DUCKS $1.50 each; young at $1 each; 2 extra drakes $3 each; all our Cup Winning Strain. GOODACRE BROS., Compton, Cal.

EGGS FOR HATCHING.

McKINLEY POULTRY FARM—BREEDERS of buff and white Wyandottes. Member American Buff Wyandotte Club. Golden Seabright and Pyle Game Bantams. Eggs $3.00 and $2.00 per 13. Take San Pedro Interurban car to McKinley, first house north. BOX 11, R. F. D., Gardena, Cal.

BLUE RIDGE POULTRY YARDS, W. H. Brown, Prop., 128 Ave. 32, Los Angeles, Cal. Breeder of Blue Andalusians. Won more first prizes than all our competitors combined. All specials went to our strain. Eggs $1.50 and $2.00.

MY WINNINGS AT THE LATE BREEDERS' Show on Rose Comb Black Minorcas were three prizes from four entries. Eggs two dollars per fifteen. Correspondence solicited. M. E. BROWN, Box one hundred, R. R. No. one, Los Angeles, Cal.

WHITE LEGHORN AND WHITE WYANdotte eggs for hatching, from extra choice, trap-nested, bred-for-eggs stock. Leghorn eggs $5.00 per 100; White Wyandotte eggs $1.00 and $1.50 per setting, $6.00 per 100. F. T. McLAUGHLIN, Gardena, Cal.

S. C. WHITE LEGHORN EGGS FROM THE bred-to-lay Blanchard strain. Large birds. $1.00 for 15; $6.00 per 100; Free city delivery. C. M. GIBBS, R. F. D. No. 4, Los Angeles, Cal. Phone W. 591.

BUFF ORPINGTONS—EGGS FOR HATCHing. $2 per 15; L. C. Black Minorcas, $1.50 per 14. $8 per 100. Also S. C. Whits Leghorns, $1.00 per 15, $4 per 100. SCOTIA POULTRY FARM, Fowler, Cal.

35c PER DOZEN; S. C. WHITE LEGHORN eggs for hatching, fine stock, large eggs, 95 per cent. fertile. Carefully packed. MATT MARTIN, R.F.D. G street, Ontario, Cal.

FARM LAND.

FOR SALE—A BARGAIN. 40 ACRES BEST orange land in Lindsay district, at Lindsay, Cal. 7 acres set to Washington navels. Good well, new pump house and barn. Some household goods; surrey and double set harness; farm implements. Best of reason for selling. Call on or write MR. ENSIGN, 223 West 2nd street, Los Angeles, or write MRS. WILL A. FRITCH, Jr., Prospect, Ohio, for further particulars. $2800 cash; $2300 on 4 years time.

RICHEST PRAIRIE LAND IN NORTH America. Yielding greatest average crops known of wheat, oats, barley, sugar beets. $15 to $25 per acre. Easy terms. Water sure. Free fare on cetain conditions. Address W. R. GILSON, 121 E. 4th street, Los Angeles, Cal.

FARM LAND—5 ACRES ¼ MILE FROM car line; 3½ acres in alfalfa; with water right. Take San Pedro Interurban car to McKinley. Inquire house opposite McKinley arch. BOX 18, R. F. D. Gardena, Cal.

POULTRY FOODS.

WEST COAST POULTRY FOODS AND REMedies are the best made and, quality considered, the cheapest. If your dealer doesn't sell them, send to us. Booklet free. Send us names of 12 persons keeping poultry and we will send you free "The Poultry Manual" by those high authorities F. L. Sewell and Ida E. Tilson, profusely illustrated. WEST COAST STOCK FOOD CO., 818 San Fernando St., Los Angeles, Cal.

POULTRY.

SPECIAL SALE—WILL SELL CHEAP 1ST, 2nd and 3rd prize Barred Rock cockerels at late breeders' show, these are grand birds and will give special price if taken at once. Also eggs. Write your wants. FRED ESPE, 1425 South Main street, Los Angeles, Cal.

COLUMBIAN WYANDOTTES, THE FANCY and Utility Fowl. Eggs and stock for sale. Eggs from Pen No. 1, headed by First Prize Cock at late Los Angeles show, $5 for 13; No. 2, $3. Also Black Tailed Japanese Bantams, $4 per 13. Frank J. Ironmonger, Hollywood, Cal.

SINGLE-COMB WHITE LEGHORNS, FINE white, large, birds; good layers. Hatching and shipping chicks. Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER, Ontario, Cal.

FOR SALE—WHITE WYANDOTTES, SILVER Cup Winners at late show. Choice Stock for sale. Eggs, $2 per setting, $10 per 100. Mrs. Mary Van Brunt, Avery and Benefit Sts., Hollywood, Cal.

BUFF ORPINGTONS—EGGS $2 PER 13, good even flock. Trios $7 up; Pens $10 to $18. Don't delay. GOODACRE BROS., Compton, Cal.

HOMERS FOR SQUAB BREEDING. GUARanteed mated birds. Prolific breeders, $1.00 a pair. EMMA V. WEATHERS, Nipomo, Cal.

HOMERS FOR SQUAB BREEDING. GUARanteed mated birds. Prolific breeders, $1.50 a pair. EMMA V. WEATHERS, Nipomo, Cal.

R. I. REDS—EGGS $2, CHOICE IMPORTATIONS; a large trio for $3. GOODACRE BROS., Compton, Cal.

BLACK ORPINGTONS—TWO TRIOS $15 each. Eggs $3 per 13. GOODACRE BROS., Compton, Cal.

TURKEYS.

FOR SALE—THOROUGHBRED MAMMOTH Bronze Turkey Eggs, $2.50 per setting of 13. J. E. PECK, Calexico, Cal.

BABY CHICKS FOR SALE.

BABY CHICKS—ALL VARIETIES OF Standard Breeds by dozens, hundreds or thousands. Leghorns, $10 per 100. DOKE STOCK FOOD CO., 711 S. Main, Los Angeles

LIVE STOCK.

FOR SALE—TWO FRESH JERSEY COWS; three to select from; one registered; granddaughter to Great Flying Fox; two years old; 3 gallons. The others 4 and 7 years old; good rich milkers. Address J. A. CAMPBELL, 816 Waterloo street, Los Angeles. Take Temple street car to Castro, then north; ½ block west to Waterloo.

YOUNG REGISTERED JERSEY BULLS from choicest cows of Judge Peter J. Shields' herd. $35 per head. Prize winning sires and dams. Pedigrees sent for inspection. TRIBBLE BRO'S, Elk Grove, Cal.

TREES.

FOR SALE—STREET TREES, ACACIAS, Camphors, Sterculas, California Peppers, Australian Peppers, Casarinas, Live Oaks, Palms, Dracenas. Fine large trees, at reasonable prices. H. L. BAUER & SONS, 737 S. Spring street.

FOR SALE—4000 VALENCIA AND 1000 W. Navels; one year buds on three year roots, clean and vigorous; buds taken from bearing trees. F. E. CHAPMAN, R. F. D. Box 34, So. Craig Ave., Pasadena, Cal.

12 Date PALMS $2.00. TWELVE TWOyear-old field-grown Date Palms with roots carefully packed in moss. THE SOUTHARD NURSERIES, Redlands, Cal.

WANTED—SEED BED STOCK; 60,000, grapefruit preferred; also 20 gallons grapefruit seeds. Address C. E. RUMSEY, Riverside, California.

FOR SALE OR EXCHANGE.

FOR SALE OR EXCHANGE—A GOOD 6-FT. 17-tooth Killefer Cultivator with 4-tooth extensions and 3-horse evener. R. L. RUTHERFORD, Highland, California.

CREAM SEPARATORS.

EVERY UP-TO-DATE RANCHER SHOULD thoroughly investigate the advantage of using a Separator. We have the agency for the most successful Separator in the market—SHARPLES. See large advertisement in this paper. Complete catalogue and descriptive matter mailed on application free of charge. ARNOTT & COMPANY, INC., 120-122-124 S Los Angeles street, Los Angeles.

AGRICULTURAL IMPLEMENTS.

WE HAVE JUST ISSUED A COMPLETE Implement catalogue illustrating and describing nearly everything in the way of a farm implement or machine required by the progressive rancher of California. A copy of this will be mailed free of charge on application. Write for it today. ARNOTT & COMPANY, INC., 120-122-124 S. Los Angeles street, Los Angeles.

CARRIAGES & WAGONS.

WE HAVE JUST SELECTED A NUMBER of up-to-date, durable and attractive surreys, top buggies, business wagons, and runabouts, which we have placed on sale at special prices. These goods are up-to-date in every way and all are fully guaranteed. Intending purchasers should not purchase without inspecting our stock We are making bona fide reduction from regular prices. If not convenient to call, write for catalogue and description. ARNOTT & COMPANY, INC., 120-122-124 S. Los Angeles street, Los Angeles.

IRRIGATING PIPE WANTED.

WANTED—SOME SECOND-HAND SHEET iron galvanized surface irrigating pipe. Address, BOX 297, Corona, Riverside Co., Cal.

MACHINERY.

FOR SALE—30 H. P. WHITE & MIDDLEton engine; as good as new; just overhauled; in local machine shop. Also a quadruplex pump. P. O. Box 678, Station C, Los Angeles.

FOR SALE—A SNAP FOR CASH. 32 H. P. Fairbanks-Morse distillate engine in A1 condition. Write WAITE, BAILIE & CO., Los Angeles.

FOR SALE—COMPLETE PUMPING PLANT in A1 condition; at a bargain. At 943 N. Main street, Los Angeles.

See Us for Sanitary Milk Bottles. O. J Weber Co., 555-557 So. Los Angeles St. Los Angeles.

White Leghorns

WHY PAY more when you can get Eggs from Selected Pens of a Heavy-Laying Strain for $1 per 15; $1.80 per 30; $2.50 per 50; and $4.75 per 100?

Arthur E. St. Clair Lordsburg, Cal.

BARRED ROCKS

EXCLUSIVELY

Send for Sixteen-Page 1906 Catalogue

H. R. CAMPBELL

BOX O PETALUMA, CAL.

Irrigation without cultivation—and that in the most thorough manner—is productive of injurious results, and where irrigation has not given satisfactory results it will be found that it was not followed by the proper cultivation.

Fruit trees are injured by subirrigation without drainage for surplus water. Standing water is destructive to the roots.

Trees can be injured, especially on roots which do not like too much water and on soils where the subdrainage is defective.

The Produce Markets

Los Angeles Markets

LOS ANGELES, April 17, 1907.

Quietness reigned on the Produce Market today. There seemed to be little pressure either to buy or sell staple commodities, with the exception of eggs; butter market is steady; potato arrivals heavy; prices remain firm; green vegetables still sell well.

Butter.

The butter market is steady at the new quotations. Butter prices are expected to remain as now quoted for some time to come, as dealers can store the surplus at present prices, and yet this surplus is not sufficiently great to warrant a further decline. There is little possibility of an advance this late in the season unless there is an unexpected heavy storm in the North and supplies are again curtailed.

Valley Creamery	47½
Coast fy,	40
Cooking	20

Cheese

Cal. Young American, per lb.	21
California Anchor	20
Cal 3-lb. hand	21
Northern, fresh	19
Domestic Swiss	22
Imported Swiss	30

Eggs and Poultry

The official quotations on eggs were unchanged this morning by the committee and the market is steady at the prevailing prices. Another heavy shipment of Eastern eggs arrived yesterday and went directly into cold storage.

Eggs local, per doz	21
Northern Candled	19
Fresh Eastern	18

The following are average prices which dealers pay to producers for live weight:

Hens, per lb.	16
Young Roosters, per lb	18
Fryers	22
Broilers, per lb.	24
Old Roosters	8
Turkeys	17
Geese	15@16
Ducks	15@16

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lbs.	7.75@8.00
Prime Steers.	5.50
Heifers	4½
Calves per lb.	5
Sheep, ewes, per head	5.00@5.25
Lambs per head	6.50
Wethers	5.50

Potatoes

Potato arrivals yesterday were large, but the market seems firm. No fancy stock is offered under $1.65 in a jobbing way, and from this figure prices to $1.85 are asked for some varieties.

Sweets, Yellow, per sack	5.00
Sweet, White per sack	4.75
Colorado	2.05
Minnesota	2.00
Early Rose, Northern	2.50
Early Rose, Eastern,	2.25
Oregon,	2.25

Vegetables

Notwithstanding a general over supply in nearly every variety of fresh green vegetables, the market was fairly well cleaned up by noon. The over abundance of green stuff caused a material reduction in prices, and it was due to the wholesale price-cutting that the goods were cleaned up. The most noticeable declines were sugar peas to 2@3 per pound, lettuce to 25c per crate, cabbage to 75c@$1 per sack, turnips to 10@20c per dozen bunches and Mexican tomatoes to $1.25@$1.50 per four-basket crate.

Asparagus, lb	10@14
Beets, per doz	40@60
Bell Peppers, Green, lb	5
Cabbage, sack	75@1.00
Chili Peppers, Green	30
Chili, Dried, per lb.	13½
Cucumbers, per doz.	75@1.50
Cauliflower, per crate	3.00
Carrots, per doz	35@@40
Celery, per doz	30@50
Egg Plant, per lb	15
Garlic per lb	6
Green Onions, doz. bunches	25@30
Lettuce, per crate	25
New potatoes, per lb.	5@6
Lima Beans, per lb	7@8

Onions are arriving more freely, and while the market is steady for the present, a decline in prices is almost certain to occur within the near future. Nevadas are still jobbing at $4 per hundred and Bermudas are $2.50 per 50-pound crate.

Onions, Aust. Brown, sk	3.50
Parsnips, per doz	35@50
Rhubarb, per lb.	3
Radishes, per doz	15@20
String Beans, per lb	8@12
Sugar peas, per lb	2@3
Tomatoes, Mexican crate	1.25@1.50
Turnips, doz. bunches	10@20
Wax Beans, per lb	16@18

Citrus Fruits

Lemons	2.00
Valencias	1.50@2.00
Navels	1.25@1.50
Grapefruit Seedless	2.00@2.50
Grapefruit seedlinggs	1.25@1.50

Fresh Fruits

Apples, Bellefluer, per box	1.50
Apples, Ben Davis	1.50

Dried Fruits

Evap. Apples, fancy, per lb	9
Apricots	13
Peaches.	12
Pears	12@13
Prunes, fy,	5@8

Beans, Dried

Limas, No. 1, per cwt	4.75
Pink No. 1	3.00
Lady Washington	3.00
Small White	3.55
Black Eyes	5.50@6.00
Garvanzas	5.50@6.00
Lentils	12@15

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb. cans,	$
Light Amber	6½@7
Comb, water white, 1-lb. fms	15@16
Light Amber	14

Nuts

Almonds per lb.	19
Peanuts, Virginia	9
Peanuts California	6@7
Walnuts, No. 1 S. S.	14

Hay

Barley, No. 1	14.50 @16.00
Barley, No 2	11.00@12.00
Alfalfa, Local, per ton	15.00@16.00
Plain Oat Hay, No. 1	17.00@19.00
Plain Oat Hay No. 2.	9.00@15.00
Wheat No. 1	14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, new, per cwt	1.50
Rolled Barley	1.35
Corn, per cwt	1.40
Cracked Corn	1.45
Feed Corn Meal	1.50
Shorts	1.35
Bran	1.20
Oil Cake Meal	2.50
Cocoanut Meal	1.40

San Francisco Markets

SAN FRANCISCO, April 16, 1907.

Butter.

California, ex. per lb	28
California, firsts	27½
California seconds	27
Packing Stock	23

Cheese

New California, fancy	16
Cal. Young American, fancy	16½

Eggs and Poultry

Fresh Ranch Eggs	20½
Eggs, first, per doz.	19½
Hens, per doz., small	5.00@5.50
Hens, large	600@7.50
Young Roosters, large	7.00@9.00
Young Roosters, small	4.50@5.50
Old Roosters	4.00@4.50
Fryers, per doz	6.50@7.50
Broilers, per doz	4.00@6.50
Ducks, young	6.00@8.00
Geese; per pair	2.00@3.00
Turkeys, per lb	16@19

Live Stock

Steers. No. 1	9@9½
No. 1 Cows and Heifers	6½@7
Hogs, 80 to 130 lbs	8@8½
Hogs, 250 to 350 lbs.	8
Calves, per lb	5@5½
Lambs, yearlings	6½@8

Potatoes

Salinas Burbanks ctl	1.50@2.00
Rivers	1.85@2.00
Sweet Potatoes. ctl	2.75@3.00
New Potatoes	4@5

Vegetables

Asparagus	6@12
Cucumbers, per doz.	1.00@1.25
Chili Peppers, Green lb	15@25
Egg plant per box	3.00@3.50
Green Peas, per lb.	10@12
Squash, crates.	65@90
Onions, Red, per sack	75@1.00
Onions, Yellow	75@1.00
Onions, new per lb.	4
Peppers, Green Bell	25
Rhubarb, per box	75@1.25
Tomatoes, Mexican	1.50@2.00

Citrus Fruits

Several more carloads of oranges arrived today, also a considerable quantity by steamer, the latter being mostly in transit for the north. The receipts on Monday turned out to be less than were reported on that day.

Lemons	75@2.00
Navels	1.25@2.75
Seedlings	1.50
Grapefruit, seedlings	1.00@1.50
Grapefruit, seedless	2.00@3.00
Limes	3.00

Fresh Fruits

The receipts of strawberries were larger and mostly of fine quality from Los Angeles in crates of 30 baskets each. Some in half crates from Los Angeles were poor and hard to sell. Lemons and limes were unchanged. Bananas and pineapples were scarce.

Apples, per box	1.50@2.50

Dried Fruits

Apples (evap.)	6@8½
Apricots, per lb	16@20
Figs, white	4@5
Prunes	3@4½
Peaches	10@12½
Raisins, seeded (1906)	3½@10
Thompson, unbleached	7½
Thompson, bleached	9@11

Beans and Seeds

Limas, No. 1	4.15@4.25
Pink	2.40@2.60
Large White	2.50@2.75
Small White	2.95@3.05
Black Eyes	5.00@5.25
Red Kidneys	3.75
Bayo	2.70@2.85

Hops

Fancy, 12½c; choice, 12c; prime 10½@11c; common, 8@10c per lb.

Nuts

Almonds new	14@18
Peanuts, Viginia	6½
Peanuts, California	5½@6
W lnuts	15@16

Honey

Clear White Comb	16½
Amber	14@15
Extracted	5½@7

Hay

Alfala, local	8.00@12.00
Oat	16.00@20.00
Wheat, No 1	23.00@26.00
Wheat, No 2	14.00@18.00

Grain

Wheat No 1	1.27@1.35
Barley No 1	1.20@1.23
Corn, small yellow	1.50
Corn, yellow	1.27@1.32
Oats, White	1.42@1.65
Oats, Red	1.30@1.50
Ground Barley, per ton	27.00@28.00
Bran per ton	22.00@23.00
Straw, per bale	45@75
Feed Corn Meal, per ton	31.00
Cracked Corn per ton	32.00
Oil Cake Meal, per ton	33.00
Cocoanut Cake, per ton	27.00
Calalfa Meal, per ton	24.00
Mealfalfa, per ton	21.00

Citrus Market

NEW YORK MARKET.

NEW YORK , April 16.—The market is higher, active and very strong. Twenty-two carloads of oranges sold today. Cloudy.

NAVELS—	Avg.
Mohawk ch Monrovia Heights A..	$2.95
Mohawk st Monrovia Heights A...	2.50
Old Mission fy C C Chapman.....	2.65
Old Mission ch C C Chapman.....	2.60
Golden Eagle st C C Chapman....	2.40
Fountain ch F H Speich & Co...	3.00
Santa Fe st F H Speich & Co....	2.80
Curtis	2.75
Curtis	2.70
Flower o r Upland Dist.....	2.75
Flower ch Upland Dist.....	2.65
Sierra Vista	2.55
Sierra Vista st	2.55
Independent o r Highland Dist...	3.10
Independent ch Highland Dist....	3.45
Orchard o r National O Co.....	3.90
Standard st National O Co.....	3.10
Clover xc Redlands O Gr A.....	3.10
Magic Isle xc Strachan Ft Co....	2.60
Magic Isle xc Strachan Ft Co....	2.50
Pyramid o r Strachan Ft Co.....	2.55
Magic Isle Thomp's imp Stra Ft Co	2.80
Papoose ch Strachan Ft Co.....	2.60
Papoose Thom's imp Strac Ft Co...	2.80
Cerrito Thompson's Improved....	3.95
Sunshine fy O Gr Cash A.....	2.90
Trade Mark st O Gr Cash A...	2.70
Golden Orange A H Ft Ex.....	3.30
Golden Rule Thom's im Riv Ft Ex	4.00
Golden Rule xc Riv Ft Ex.....	3.35
Ostrich xfy S B Ft Ex.....	2.80
Winner xc S B Ft Ex.....	2.65
Eagle xc Highgrove Ft Ex.....	3.40
Stag Thomp's imp ACG Ft Ex....	2.85
Pointer Thomp's imp ACG Ft Ex	3.40
Hunter Thomp's imp ACG Ft Ex	2.70
Stag xfy ACG Ft Ex.....	2.70
Pointer xc ACG Ft Ex.....	3.25
Hillside Gem xc Loveless Ft Co...	2.75
Stag xfy ACG Ft Ex.....	2.60
Pointer xc ACG Ft Ex.....	2.20
Hunter st ACG Ft Ex.....	2.90
Carmencita xc S T Ft Ex.....	2.60
Colombo st S T Ft Ex.....	2.45
Solano o r Stewart Ft Co.....	2.55
SEEDLINGS—	
Flower o r Upland Dist.....	3.75
Magic Isle xc Strachan Ft Co....	2.35
Carmencita xc S T Ft Ex.....	3.15
Solano o r Stewart Ft Co.....	3.00
BLOODS—	
Mariposa fy Cal C U.....	3.45
Golden Orange xfy A H Ft Ex....	3.55
BLOODS (Halves)—	
Holly Wreath fy Cal C U.....	1.95
Golden Orange xfy A H Ft Ex....	1.70
TANGERINES (Halves)—	
Flower o r Upland Dist.....	1.90
Squirrel fy A H Ft Ex.....	1.85
Mahala	2.35

SICILY LEMON SALES.

NEW YORK, April 16.—Seventeen thousand boxes of Scilly lemons, ex steamer Ida, were sold today. The market is from 15c to 20c higher, with a strong preference shown for 360s, although 300s were also eagerly taken, denoting urgent orders. There were no periods of weakness. Fancy 300s sold for $4.00 to $4.40; seconds, $3.75 to $4.10. Fancy 360s sold for $4.50 to $4.80; seconds, $4.10 to $4.50. Fancy 500s sold from $5.10 to $6.05.

The next sale will be Friday—six and possibly sixteen thousand boxes.

CALIFORNIA CITRUS SHIPMENTS.

LOS ANGELES, April 16.—Monday, April 15: Oranges, 182 carloads; lemons, 10 carloads. Total to date this season, 14,422 carloads, of which 1416 carloads are lemons. Total to same date last season, 16,469 carloads, of which 1641 were lemons.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

SMALL IRRIGATION DITCHES.

When a farmer enters a new country where irrigation is necessary he must determine (1) how he may best deliver water to his land, and (2) wnat crops are adapted to the soil and for local uses.

Everything with him is tentative. Unless he is fortified by an income outside of that obtained from his farm, the first few years he has a struggle for existence. That the pioneer is often overcome in this unequal fight is evidenced by many deserted homes and unfinished irrigation works.

Owing to his inexperience in irrigation, he may lose his crops by not using the proper volume of water or by using it at the wrong time. One failure often means the abandonment of everything and a retreat to a region where conditions seem more favorable.

In a new country where the rainfall is ample for the growth of crops serious obstacles must be overcome before returns are received for the labor expended. If, in addition to these difficulties, water must be brought to the land for irrigation and domestic purposes, the problems become much more complicated, and correspondingly greater credit is due when success rewards the attempt.

To the Eastern farmer, whose cultivated lands are rolling and broken, the problem of spreading water over the surface of the ground from ditches has some serious phases. Often the stream passing his farm is bordered by steep bluffs, and its fall seldom exceeds 3 to 4 feet per mile. In his judgment the cost of raising water from such a source in sufficient quantities for irrigation would not be justified by the slight increase in yields or the saving of an occasional crop.

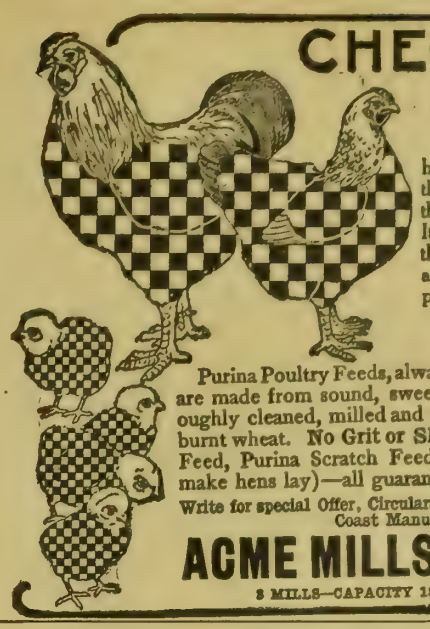
The Western irrigator would arrive at the same conclusion if he had to deal with similar conditions. His agricultural land is nearly always smooth, and usually has a gentle slope with and toward some natural drainage channel, and would bear no crops without irrigation. The stream from which he proposes to draw his supply of water has a large fall, so that a ditch taken from it with a moderate grade can recede rapidly, and hence cover a large area in a short distance. A combination of these features makes it possible for individuals to construct irrigation works on the smaller streams.

THE MOST EFFICIENT REMEDY OF ITS KIND.

COVINA, Cal., July 17, 1905.—The Lawerence-Williams Co., Cleveland, O.:

Please send me your pictures of Famous Horses. I have carried GOMBAULT'S CAUSTIC BALSAM in stock constantly for the last twelve years, and recommend it as the most efficient remedy of its kind on the market. It should always be kept in every stable. C. F. CLAPP.

The Johnson & Musser Seed Co. received a car load of seed corn this week which has been long delayed by the freight blockade.



CHECKERBOARD CHICKENS

Why are you raising Chickens? For your health or to make money? If to make money then you must **feed right.** Mixing a few things together doesn't make a Poultry Feed. It is a scientific proposition and requires a thoroughly equipped mill to grind and clean and blend grains and seeds in just the right proportion for baby chicks or laying hens.

The Purina Checkerboard Bag

Purina Poultry Feeds, always in checkerboard bags, are made from sound, sweet grains and seeds thoroughly cleaned, milled and screened. No smutty or burnt wheat. **No Grit or Shell.** Purina Baby Chick Feed, Purina Scratch Feed, Purina Egg Food (to make hens lay)—all guaranteed.

Write for special Offer, Circulars, etc., direct to sole Pacific Coast Manufacturers

ACME MILLS CO. PORTLAND OREGON

3 MILLS—CAPACITY 18 CARLOADS DAILY

Chas. E. Smith Breeder of *Arrowhead Strain* of

Barred Plymouth Rocks

Won at Los Angeles Show, the largest ever held on the Coast, 225 Barred Rocks in class, as follows: 1st, 2nd and 5th Pens; 1st, 3rd, 4th and 5th Hens; 1st, 2nd 3rd and 4th Pullets; 2nd Cockerel. Barred Rock Club Cup for Best Display; Association Cup for Best Display, and Three Incubators, one for Best Pen in Show, all breeds competing.

Choice Stock for sale from same mating that I bred my prize winners from. Prices reasonable. Eggs, ***$3*** and ***$5 per 15.***

Chas. E. Smith, Gardena, Cal.

Take San Pedro electric cars via Gardena to Smith's Crossing.

McCullough Poultry Farm

OFFERS THE BEST IN

Barred Rocks

OUR BIRDS WON as follows: Second and 5th cock, 4th cockerel, 2d, 3d and 5th hen, 1st, 4th and 5th pullet, 1st and 2d pen, and several specials. Our birds are line-bred, and are excellent breeders as well as show birds. We have sixteen pens mated up from which you can select eggs. Eggs from regular matings $2 and $3 for 13; from special matings $7 for 13.

CORRESPONDENCE INVITED

H. T. McCullough, Mgr., Box A171, West White Oak Ave., Monrovia, Cal.

The White Faced Black Spanish

Are famous as layers of large white eggs at all seasons of the year. We won all prizes at the Breeders Great Show, 1907. **Choice Cockerels For Sale, $5. Eggs, $1.50 per 13, $4 50 per 50, $8 per 100.** Special matings, $3 per 13. Fertility guaranteed.

Mrs. W. H. O'Connor Lock Box 112, Dolgeville, Cal.

Starbuck's Barred Plymouth Rocks

We Trap-Nest Our Hens. Bird Laying Qualities are inherited. Why set from poor layers? We use pedigreed cockerels whose mothers have for over six generations laid over 200 eggs per year. Eggs from old hens, $1.50 and $2.00 per setting of fifteen; from pullets $1.00 per setting of 15. No sales or visitors Sundays.

Wm. Starbuck - Fullerton, Cal.

Chicks Just Hatched **We ship them everywhere. Pure Bred White Leghorn Chicks from the Best Egg Producers in the United States**

CALIFORNIA INCUBATOR CO., MAXWELL, MAY 27, 1906.

Gentlemen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come so far and being so long on the way without the loss of a single one, but it is an undisputed fact that such was the case. We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. CAMPBELL.

CALIFORNIA INCUBATOR CO., 907 Washington St., Petaluma, Cal.

Beef, Blood and Bone Will Make Your Hens Lay

This is not a medicine but a high grade nitrogenous food. Write for free booklet, "How to make Hens Lay." Our Poultry Foods are sold by all local dealers and manufactured solely by

The Pacific Guano and Fertilizer Co.

Also Pioneer Manufacturers of ***High Grade Fertilizers.*** Indiana and Yolo Sts., San Francisco, Cal. Write for our free booklet, "Farmer's Friend." Valuable to all farmers and ranchers.

8 Varieties of Wyandottes

Each Bred on Separate Farms. Quality Best. Eggs and Stock guaranteed. For particulars write for catalogue.

Queen Poultry Co. **Box 2, Los Angeles, Cal.**

Altadena Buff Orpingtons

N. HAYDEN & CO., BOX 1001, PASADENA

You can win with my stock and eggs because I have won and am winning. Matings this year very fine. Inspection invited. Write me your wants. **Eggs $2, $3 and $5 per 15.**

BUFF WYANDOTTES

None Better for Beauty and Utility

In hot competition at Breeders' L. A. Show took more prizes than all my competitors combined.

O. S. Hofmann, San Jacinto, Cal

SHADE'S RHODE ISLAND REDS

The World's best layers.

Write for Folder.

J. W. Shade San Bernardino, Cal.

April 1907

PURE FOODS

Special This Month

Best Granulated Sugar, 100-lb. bag, each	$4.55	Castile Soap, white, imported, large bar	$0.25
Flour, Extra Family, makes wholesome delicious, bread, 50-lb. sack for	.99	Crisp Soda Crackers, 1-8 case, each	.40
Coffee, our 25c standard, this month, bulk, whole roast or pure ground, excellent, only, lb.	.20	Plum Butter, in pint Mason jars, country pack, each	.25
Tea, our 50c grade family mixed this month, lb.	.37	"Royal" Cook Book, all this month with freight orders, when asked for, only	Free
Rock Candy Drips, our old, popular standard, back again, better than ever, 5-gal, tin-lined jacket	2.65	Walnuts, best, medium size, lb.	.15
Apple Butter, Heinz stone pots, each	.47	Figs, four-crown, Smyrna flavor, equal imported, in 10-lb. boxes or less, per lb.	.10
Sardines, Imported, good grade, 1-4s, three tins for	.25	Rolled Oats or Wheat, strictly fresh, 8 lbs. for	.25
Corn Meal, best Eastern yellow, 50-lb. sack	.98	Kerosene Oil, Pearl brand, 10 gal.	1.85
Honey, San Diego, pure, but candied solid, very light amber color, 5-gal. tin	3.75	Corn or Tomatoes, new, choice, 3 tins for	.25
Lobster, California pack, "Crawfish," per 1-lb. tin	.25	Royal Savon Soap, 20-bar box	.75
Snider Catsup, two pint bottles for	.45	Sour Pickles, 5-gal. keg	1.00
		Chocolate, per 1-lb. can, "Miner's"	.20
		Cocoa Shells, 10 lbs. for	.50
		Rice, good table, from Carolina seed. lb.	.05
		Hams, the very choicest, genuine Eastern, lb.	.18

Garden hose, half-inch 5c foot, three-quarter-inch 7c
Barn Paint, Genessee, 1 gal. 80c, 5 gal. $3.50
White Lead, kegs, lb. 6c
Repair Outfits, 75c to $1.50
Machine Oil, light or heavy, 5 gal. $1.40
Water Pipe, carload rates
Poultry Netting, 150 ft x 2 ft $1.50
50-ft Roll Green Shade Cloth, 1¼c square foot
Barb Wire, per 100 lbs $3.60
Nails, 10-lb keg $3.20
The Pedigo Washer, all iron, $5.75
New Vegetable Seeds, 2 pkgs 5c, doz 25c
Carborundum Grinders $3.50

HEADQUARTERS FOR

Poultry Supplies	Kitchen Utensils	Crockery	Provisions
Dairy Supplies	Hardware	Seeds	Implements
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EVERYTHING for the MINE — RANCH — HOME

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Original and Largest Western Mail Order House

NO LIQUORS

Write for Full Price List. Mention the CULTIVATOR and we'll send you free a Royal Cook Book, the best published.

CONGO ROOFING

FREE SAMPLE
WRITE TODAY

Settle that leaky roof once and for all! Cover the old shingles or the pin-holed tin with Congo and end the trouble!

It won't take as long or be as hard work as to patch the old roof.

You can lay Congo yourself. Unroll it on the roof and nail it down! Then forget you have a roof. There will be no more leaks to remind you of it.

We call Congo the **"Never-Leak Roof."** We mean it.

Send for free sample and you will understand why we are so confident.

BUCHANAN-FOSTER COMPANY

Philadelphia San Francisco Chicago

When writing advertisers, mention Cultivator.

Household Department

BEFORE THE RAIN.

We knew it would rain, for all the morn
A spirit on splendor ropes of mist
Was lowering its golden buckets down
Into the vapory amethyst.

Of marshes and swamps and dismal fens—
Scooping the dew that lay in the flowers,
Dipping the jewels out of the sea.
To sprinkle them over the land in showers

We knew it would rain, for the poplars showed
The white of their leaves; the amber grain
Shrunk in the wind; and the lightning now
Is tangled in tremulous skeins of rain.

After The Rain.

The rain has ceased, and in my room
The sunshine pours an airy flood;
And on the church's dizzy vane
The ancient Cross is bathed in blood.

From out the dripping ivy-leaves,
Antiquely carven, gray and high,
A dormer, facing westward, looks
Upon the village like an eye.

And now it glimmers in the sun,
A square of gold, a disk, a speck;
And in the belfry sits a dove
With purple ripples on her neck.—
—Thomas Bailey Aldrich.

IMPRESSIONS OF NIAGARA.

WE WERE at the foot of the American fall. I could see an immense torrent of water tearing headlong down from some great height, but had no idea of shape, or situation, or anything but vague immensity.

When I was seated in the little ferry-boat, and was crossing the swollen river immediately before both cataracts, I began to feel what it was; but I was in a manner stunned, and unable to comprehend the vastness of the scene. It was not until I came on Table Rock, and looked—Great Heaven, on what a fall of bright, green water!—that it came upon me in its full might and majesty. Then, when I felt how near to my Creator I was standing, the first effect and the enduring one—instant and lasting—of the tremendous spectacle, was peace. Peace of mind, tranquility, calm recollections of the dead, great thoughts of eternal rest and happiness; nothing of gloom or terror. Niagara was at once stamped upon my heart, an image of beauty; to remain there, changeless and indelible, until its pulses cease to beat forever.

Oh, how the strife and trouble of daily life receded from my view and lessened in the distance, during the memorable days we passed on that enchanted ground! What voices spoke from out the thundering water; what faces, faded from earth, looked out upon me from its gleaming depths; what heavenly promise glistened in those angels' tears, the drops of many hues, that showered around, and twined themselves about the gorgeous arches which the changing rainbows made!

I never stirred in all that time from the Canadian side, whither I had gone at first. I never crossed the river again; for I knew there were people on the other shore, and in such a place it is natural to shun strange company.

To wander to and fro all day, and see the cataracts from all points of view; to stand upon the edge of the great Horseshoe Fall, marking the hurried water gathering strength as it approached the verge, yet seeming, too, to pause before it shot into the gulf below; to gaze from the river's level up at the torrent as it came streaming down; to climb the neighboring heights and watch it through the trees, and see the wreathing water in the rapids hurrying on to take its fearful plunge; to linger in the shadow of the solemn rocks three miles below, watching the river, as, stirred by no visible cause, it heaved and eddied and awoke the echoes, being troubled yet, far down beneath the surface, by its giant leap; to have Niagara before me, lighted by the sun and by the moon, red in the day's decline, and gray as evening slowly fell upon it; to look upon it every day, and wake up in the night and hear its ceaseless voice,—this was enough.

I think in every quiet season now still do those waters roll and leap and roar and tumble, all day long; still are the rainbows spanning them, hundred feet below. Still, when the sun is on them, do they shine and glow like molten gold. Still, when the day is gloomy, do they fall like snow, or seem to crumble away like the front of a great chalk-cliff, or roll down the rock like dense white smoke. But always does the mighty stream appear to die as it comes down, and always from its unfathomable grave arises that tremendous ghost of spray and mist which is never laid,—which has haunted this place with the same dread solemnity since darkness brooded on the deep, and that first flood before the deluge—light—came rushing on creation at the word of God.—Charles Dickens.

THE MULE WITH THE GO.

Bowed with the ignominy
Of the Kentuckian's inegenuity
He stands and gazes into space;
No pride of ancestry in his mien,
No hope of posterity in his face.
Upon his back the indolent negro
Rides to and from the plow,
The saplings 'round the country church
Are familiar with his bray.
Who made him dead to the bull-whip crack
And the plowline's sting?

Who toughened his hide to that extent
He winces not at the "yaller-jacket's" caress?
Is this the thing Kentucky gave man
To take the place of the patient ox,
To tighten the traces of industry,
And kick the vanities out of civilization?
Slave to the log cart and the plow,
What consolation to him
Is the philosophy of induction
And the electric trolly car?
The rift of dawn usually finds him
Chewing a cud of musty hay,
Waiting patiently Time's tragedy
To be re-enacted the coming day.
Thumped, lambasted and "cussed at"
He enters no cry of protest,
Therefore is not guilty of prophesy;
But bides, uncomplainingly, the time
When his supple and unerring heels
Shall kick his tormentor into eternity.

DECORATION OF THE FARM HOME.

The simple training of ivy over a mantel allowing its branches to drop to the floor is beautiful; if there is a bay window, a nest of ferns out of which a calla or a single plant towers above the green, is very effective.

There must be an entire lack of formality, especially at a quiet home gathering where sociability and hospitality are at their best. The simple, unstudied effect will be in perfect harmony with the occasion.

THE STREAM OF LIFE.

Life bears us on like the current of a mighty river. Our boat at first glides down the narrow channel, through the playful murmurings of the little brook and the windings of its grassy borders. The trees shed their blossoms over our young heads; offer themselves to our young hands; we are happy in hope, and we grasp eagerly at the beauties around us;—but the stream hurries on, and still our hands are empty.

Our course in youth and manhood is along a wider and deeper flood, amid objects more striking and magnificent. We are animated by the moving pictures of enjoyment and industry passing before us; we are excited by some short-lived success, or depressed and made miserable by some equally short-lived disappointment. But our energy and our depression are both in vain. The stream bears us on, and our joys and griefs are alike left behind us.

We may be shipwrecked—we cannot be delayed; whether rough or smooth, the river hastens to its home, till the

roar of the ocean is in our ears, and the tossing of the waves is beneath our feet, and the land lessens from our eyes, and the floods are lifted up around us, and we take our leave of earth and its inhabitants, until of our further voyage there is no witness save the Infinite and Eternal.—Reginald Heber.

THE MIGHTY WATERS.

In itself the ocean panorama is very grand. It would be hard to exaggerate the beauty of both sea and sky, especially in and near the tropics. The sky near the horizon was of pale blue, and often the clouds all around the sea line of a light pink tint, and the sea near the ship like an amethyst or the wing of some tropical bird. In those rare times when the sea was calm, the motion of the ship made it flow in large sheets as of some oily liquid; or, again, like the blue steel of some polished cuirass.

What is there more sublime than the trackless, all-surrounding, unfathomable sea? What is there more peacefully sublime than the calm, gently-heaving, silent sea? What is there more terribly sublime than the angry, dashing, foaming sea? Power—resistless, overwhelming power—is its attribute and its expression, whether in the careless, conscious grandeur of its deep rest, or the wild tumult of its excited wrath.

SEVEN AGES OF MEN.

All the world's a stage,
And all the men and women merely players;
They have their exits and their entrances
And one man in his time plays many parts,
His acts being seven ages. At first the infant,
Mewling and puking in the nurse's arms,
Then the whining schoolboy, with his satchel
And shining morning face, creeping like snail
Unwillingly to school. And then the lover,
Sighing like furnace, with a woeful ballad
Made to his mistress' eyebrow. Then a soldier,
Full of strange oaths, and bearded like the pard,
Jealous in honor, sudden and quick in quarrel,
Seeking the bubble reputation
Even in the cannon's mouth. And then the justice
In fair round belly, with good capon lined,
With eyes severe and beard of formal cut,
Full of wise saws and modern instances—
And so he plays his part. The sixth age shifts
Into the lean and slippered Pantaloon,
With spectacles on nose and pouch on side,
His youthful hose, well saved, a world too wide
For his shrunk shank; and his big manly voice,
Turning again toward childish treble, pipes
And whistles in its sound. Last scene of all,
That ends this strange eventful history,
Is second childishness and mere oblivion—
Sans teeth, sans eyes, sans taste, sans everything.

—Shakespeare.

THE GULF STREAM.

There is a river in the ocean. In the severest droughts it never fails, and in the mightiest floods it never overflows. Its bank and its bottoms are of cold water, while its current is of warm. The Gulf of Mexico is its fountain, and its mouth is the Arctic seas. It is the Gulf Stream. There is in the world no other such majestic flow of waters. Its current is more rapid than the Mississippi or the Amazon, and its volume more than a thousand times greater.

The very best effect of flowers for the little social gatherings of the farm home is secured by the simplest possible arrangements.

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Axes or Hatchets—Bits or Chisels—
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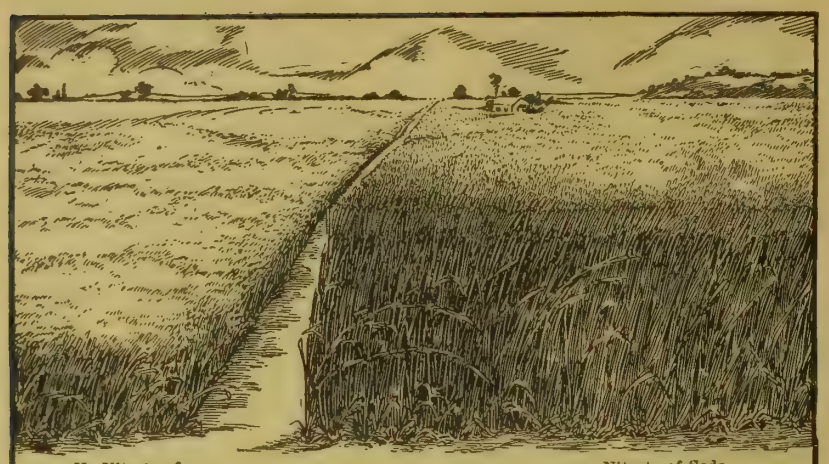

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IT IS not what your crop brings on the market so much as what it costs you to raise it that counts in farming.

If you are farming on high-priced land under the most trying difficulties—if your soil has begun to fail, and your crops are not so large as they used to be—if it takes so much high-priced help to produce and harvest your crops that there is no profit left, you are not making much money farming.

Why don't you sell out at the high prices you can now realize and invest your cash in land where you can get five or ten times as many acres for the money, of better, newer soil than that you own at present?

When you bought the farm you now own, it was cheap—the rise in land values made you rich. Why not do that same thing over again?

In Southern Alberta, Canada, is to be found as rich land as there is anywhere. It will raise anything that your land will raise, with possibly one or two exceptions. It is the greatest live stock country on earth, and the markets are just as good as the markets you now patronize.

In this new country you can raise crops at a small percentage of what it now costs you to raise them, because climatic conditions are such that one man can attend as many acres as in your country, and each acre will produce from two to four times the quantity one of your acres will produce if you are farming without irrigation.

On the vast irrigated tracts of Alberta you can find a farm that will just suit you, and you can rest assured that if you farm it fifty years you will never have a crop failure. No waiting for rain—no chance at all to take—just a certain, sure crop every time you put seed in the ground, and a bigger crop than you can hope to raise on unirrigated ground.

If you are interested in very fertile land, at low prices, with a certain harvest every year, we can sell it to you on terms that are so easy there is no excuse for any man being without a farm.

Write us for full particulars, and let us tell you how to see Alberta and this land at very little cost for the trip—let us tell you how to become independent in two years.

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Losses by Evaporation

Bulletin 177 of the Office of Experiment Stations, United States Department of Agriculture, just issued, gives the result of experiments covering several years, performed in co-operation with the State of California, for the purpose of estimating the losses of water by evaporation from irrigated fields and determining the effect of different methods of applying water and of cultivating fields in checking these losses. This work was done in California under the supervision of Samuel Fortier, under the direction of Elwood Mead, Chief of Irrigation and Drainage Investigations.

Water Costly.

In Southern California water has a very high value and the supply is limited, making it important to economize in every way possible. Thousands of dollars have been spent in lining ditches with cement and in putting in underground pipes for carrying water to the points where it is put upon the land, so that losses in transporting water, which in open earth channels often equal one-half the supply at the head of a ditch system, have been largely eliminated.

It has been realized that there are still large losses occurring when the water is applied to the soil, but there has been little or no knowledge of the extent of these losses or the exact effect of different methods adopted for checking them. This work of Professor Fortier's is an attempt to measure both by means of experiments with soils in water-jacketed tanks, each tank containing from 300 to 1300 pounds of soil. Water was applied to the soils, and the soils were cultivated in such manner as to resemble the different methods of treating soils in irrigated fields.

Series of Experiments.

In two experiments with cultivation as soon as possible after the application of water, the losses from cultivated soils were but one-half and one-third, respectively, as great as those from similar soils receiving the same quantities of water, but not cultivated after irrigation. The savings were 5 to 2½ per cent. of the quantities applied in the two experiments.

A second series of experiments included the application of water on the surfaces, not followed by cultivation, and the protection of the wet surfaces by placing upon them mulches of dry soil 4, 8 and 10 inches thick. In this case the losses in fourteen days following irrigation were: From unprotected soil, 23 per cent. of the water applied; from soil protected by a 4-inch mulch, 6 per cent.; from soil protected by an 8-inch mulch, 2½ per cent.; and from soil protected by a 10-inch mulch, 1½ per cent. of the water applied. After these fourteen days the losses from all were substantially uniform.

Another experiment included applying water to the soil at the surface and in furrows 3, 6, 9, and 12 inches deep, all soils being cultivated on the third day after irrigation began. The experiment covered ten days, and at the end of that time the losses were: From the surface-irrigated soil, 24 per cent. of the water applied; from soil irrigated in furrows 3 inches deep, 21 per cent.; in 6-inch furrows, 17 per cent; in 9-inch furrows, 15 per cent.; and in 12-inch furrows, 12 per cent., the loss in the last case being half that in the first.

Value of Experiments.

These experiments related especially to the irrigation of orchards, where it is possible to apply the water at considerable depths and to cultivate the soil to depths of 10 or 12 inches without injury to the trees. Naturally these methods cannot be used in the irrigation of grain and hay, where the water must be applied at or near the surface, nor on crops whose root systems are near the surface, so that deep cultivation cannot be practiced.

They show, however, that where water can be applied in deep furrows, and where irrigation can be followed by deep and thorough cultivation, half the water ordinarily lost by evaporation can be saved, and that this equals 10 to 20 per cent. of the water applied, making possible an extension of, say, 15 per cent. in the area irrigated with a given supply of water. In other words, if land has been receiving a depth of 2 feet of water under the old system, it need receive only 20 inches under the new system, or a stream which has irrigated 100 acres can be made to serve 115 acres.

The report gives a large amount of additional information on evaporation from soils and water surfaces under different conditions.

The bulletin may be obtained of the Superintendent of Documents, Government Printing Office, at 10 cents a copy.

COMPUTING WATER.

The following data will be helpful in computations: One miner's inch, described elsewhere equals 0.1496 gallon per second; 8.976 gallons per minute; 538.56 gallons per hour; 12,925.44 gallons per day; 0.02 cubic foot per second; 1.2 cubic feet per minute; 72 cubic feet per hour. One acre-inch of water (that is, 1 inch in depth over an acre of surface) equals 27,152 gallons, or 3,630 cubic feet, and 1 miner's inch will supply this quantity in about 50.4 hours. Thus a simple calculation shows that a little stream of 5 miners' inches will supply enough water to cover an acre 2.3 inches deep in about 23 hours—a fair amount for one irrigation of soil of average character if it has not been allowed to become too dry before the application; in fact, this is an average amount actually used for an irrigation of shallow-rooted plants like most field and garden crops.

SOURCES OF WATER.

The sources of water supply and methods of use most frequently available for a single farm include the following: Diversion of perennial streams; development in dry stream beds; development of springs; catchment from outcroppings of water-bearing strata; tunneling to intercept such strata when deeply covered; flowing wells; pumping from wells, lakes, or streams, and storage of storm water from surface flow or from drainage systems.

IRRIGATION POINTERS.

Trees are not injured when intelligence enters into the use of water.

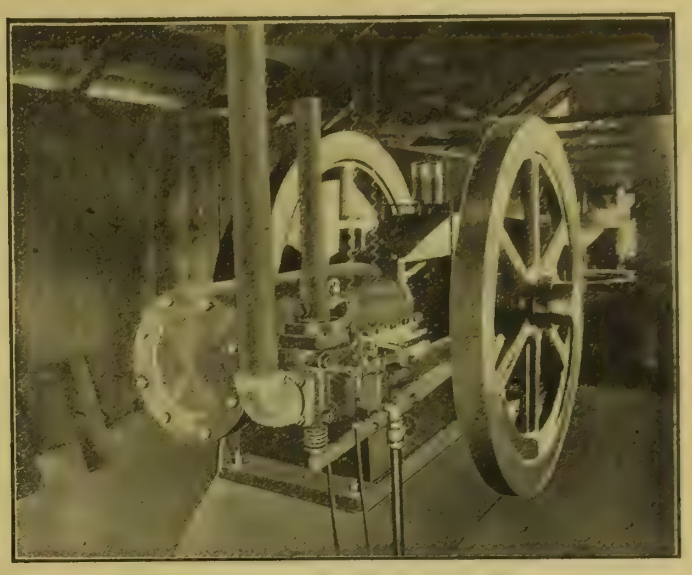
Some kinds of fruit are especially injured by over-irrigation.

Careless irrigation often injures trees and vines.

Demonstrated Economy and Efficiency

ESSENTIALLY AS GOOD as the day it left the factory, this engine is a constant advertisement of the high-grade material and first-class workmanship that enter into the manufacture of every **"Western"** Engine.

Water pumped by F. Lauzier's 60-H.P. "Western"



The First 60-H.P. "Western" Engine

El Monte, Cal., September 24, 1906.

Western Gas Engine Company,
Los Angeles, California.

Gentlemen:

Four years ago I bought a ranch at El Monte, and finding it necessary to install a pumping plant for irrigation purposes, I made a thorough investigation of the different engines and pumps then on the market. As a result of this investigation I decided that the "Western" was by far the ***best engine on the market*** and placed an order with you for a 60-H.P. engine and a No. 8 vertical centrifugal pump. In the three years that I have used it, the engine has demonstrated by its economy, ease of operation and lack of repairs, that my judgment was correct. The engine shows absolutely no sign of wear, and seems to be doing better work today than ever.

We are pumping 200 inches of water against a head of 60 feet on a fuel consumption of 6 gallons of No. 2 Distillate per hour.

I am well pleased with the engine and with the way you have treated me, and can cheerfully recommend you to any one wishing fair treatment and reliable goods. Yours respectfully, F. LAUZIER.

This ranch has recently been sold at a high figure, one of the principal inducements to the purchaser being the fine pumping plant.

90-H.P. "Western" of Western Water and Power Co.

Glendora, Cal., September 4, 1906.

Western Gas Engine Company,
Los Angeles, California.

Gentlemen:

Referring to the 90-H.P. "Western" Gas Engine purchased from you last spring, would say that we commenced operating this engine on July 6th last, since which date it has been going practically continuously day and night.

The engine has been running a Byron Jackson No. 6 Centrifugal Pump, lifting 75 miners' inches of water 200 feet, and has not been operating to near its full capacity; that is to say, we still have a good reserve of power in the engine.

The engine runs very smoothly, requires little attention, and we cheerfully recommend it to parties in need of power.

Yours very truly, WESTERN WATER & POWER CO.
By C. S. Whitcomb, Mgr.

Approved: Geo. D. Whitcomb, Chairman Executive Com.

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Catalogue W on request. Mention the Cultivator.

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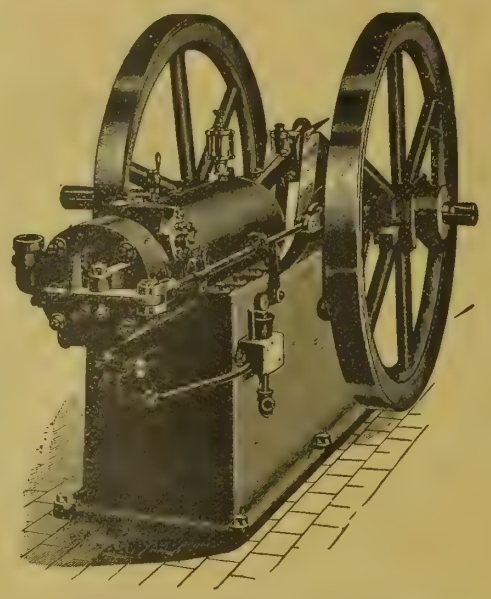

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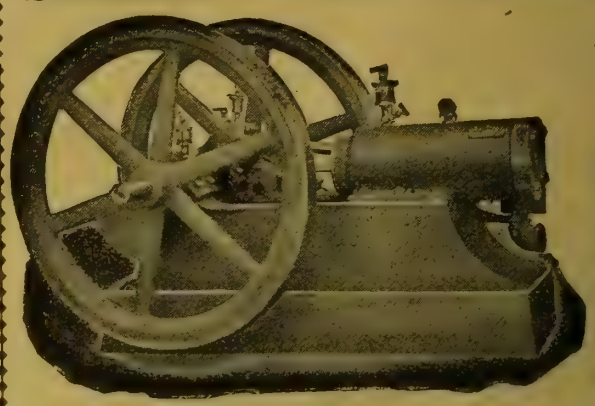

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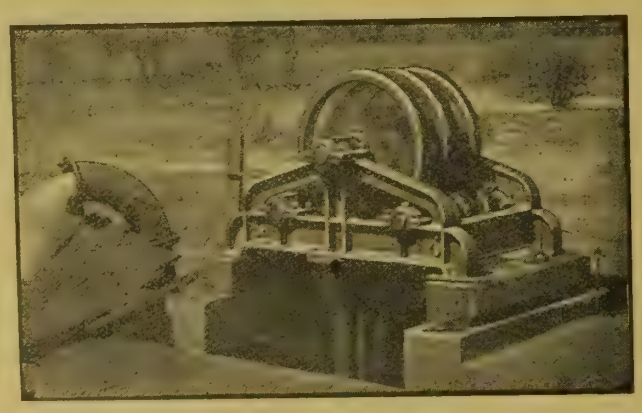

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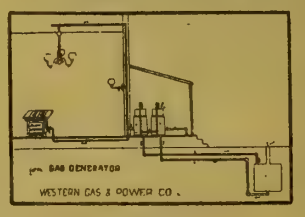

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AUTOMATIC SAFE ECONOMICAL.
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Gentlemen:
Replying to yours of the 20th inst., I would state that the plant installed for me by the Western Gas and Power Company, on my Hopland Stock Farm, is giving entire satisfaction, and I cannot speak too highly of it. Yours truly, A. W. Foster.
Mr. Foster used an acetylene gas generator before we installed our Western.

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California Cultivator

Los Angeles April 25 1907 San Francisco

The Wild Flowers of California

Astragalus Brauntonii, a Native Bush Pea

IT IS probable that California never had a better season than the present for the collection of our native plants and their seeds. Abundant rains, coming at opportune times, have accomplished wonders with our wild flowers, especially among herbaceous plants.

Just now, and for two or three weeks to come, one may be able to collect seeds of many plants, like our yellow violet (Viola pedunculata) and the shooting star or wild cyclamen (Dodecatheon media). Both of those mentioned have conspicuous seed pods and the plant is easily recognized. Why not have several of our more showy native flowers close at hand and note the improvement, in size and number of flowers, which comes with cultivation.

As an instance of what can be accomplished, our giant sunflowers of the garden are the same as the "pesky" wild ones which infests our fields and roadsides. Cultivation and selection made the change. Our gorgeous chrysanthemums all came from a little single yellow flower about the size of a nickel. Many of our native flowers are capable of great improvement under but little better conditions than they have on their native heath. Gather seeds of a few this year and give them a trial in the garden.

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Chicks should be given a feed that makes healthy, well developed bodies. COULSON'S SPECIAL DRY CHICK FEED contains the ingredients that are best adapted to give nourishment to the growing chicks: Sweet tender seeds, cracked grains, blown free from dust, cut oat meal, tiny pieces of cooked and dried meat, fine particles of fresh cut bone, charcoal, burnt bone, and other things.

It is clean, sweet feed that is easily digested, and chicks show increase in weight, strength and beauty when fed it exclusively. Little chicks need no other food for the first six weeks. You can feed your chicks entirely on COULSON'S SPECIAL DRY CHICK FEED the first six weeks, at a cost of about 4 cents apiece.

Ask your feed dealer about Coulson's special and be sure that he does not sell you something else.

If your dealer does not keep it, write us, and we will tell you where and how to get it.

To be able to raise the chicks that you hatch and have early broilers to SELL AT A HIGH PRICE; to raise NICE LARGE HEALTHY CHICKS; to have chicks that will stand on the floor and crow when six weeks old; to raise chicks that you will be proud of, feed

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Where Coulson's Special Dry Chick Food cannot be obtained from local dealers, we will ship, freight prepaid to any railroad station in California, 100-lb. sack for $4.00 or 200 lbs. for $7.50, cash with the order.

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"I have fed your Special Food and Growing Chick Food to all my stock with one exception. I tried one lot of 350, and fed them my way or raising chicks back East. Results just fair. The other were fed up to three months on your Special Chick Feed, and the results were a surprise to me. The birds were large and the cockerels out of one lot I sold to the California Market and got a big price, with the request to send on to them at any time I had more cockerels of the same quality." Respectfully, A. P. WARD, Calistoga.

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Gentlemen:—

While in the poultry business I have tried several brands of Chick Foods and find COULSON'S SPECIAL far superior to any other brand.

Yours truly,

(Signed.) Floyd W. Scott.

Coulson Poultry and Stock Food Company, Petaluma, California

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California Cultivator

Vol. XXVIII—No. 17 Los Angeles, California, Thursday, April 25, 1907 Subscription $1 a Year

Oidium or Powdery Mildew of the Vine

Extracts from Bulletin No. 186, Issued the Present Year by the California Experiment Station

By FREDFRIC T. BIOLETTI, University of California

CALIFORNIA is peculiarly fortunate in its freedom from most of the serious fungous vine diseases which add so much to the expense and uncertainty of grape growing in most countries.

Peronospora, Black Rot, and Anthracnose are here quite unknown. Of the four most serious fungous diseases which attack the above-ground portions of the vine, these three are the most to be feared, as they are not only capable, if neglected, of destroying the whole crop of a vineyard, but require the utmost vigilance and much troublesome treatment with winter washes and summer sprays to hold them in check.

Their absence makes quite unnecessary the swabbing of the dormant vines with sulphate of iron and the spraying of the growing vines with Bordeaux mixture which are adopted here by some vineyardists who have learned the practice in Europe or the Eastern States where it is necessary.

On the other hand, the remaining serious fungous disease—Oidium—exists in all parts of California. From one point of view, this is the most serious disease of the four, as, if uncontrolled, it is capable of spreading more universally through the vineyards and of absolutely destroying the crops in nearly all. From another point of view, it is the least to be feared, as it is possible to control it completely, at least in most parts of California, by much simpler and less expensive methods than are needed for the others mentioned.

Discovery of the Utility of Sulphur.

After 1854, the grape growers of France commenced to learn how to control the disease. The use of sulphur for this purpose, discovered and perfected between 1850 and 1853, soon became general, and by 1859 the crop of grapes had reached its normal volume in France.

The rapidity with which sulphur enabled the French grape growers to re-establish their vineyards is in contrast with the slower process of controlling the phylloxera. In three or four years after the use of sulphur became general in the Herault the crops had reached their normal volume. It has taken twenty years to re-establish the same vineyards on phylloxera resistant stocks.

Damage done by the Disease in California.

In California the Oidium has never produced such wide-spread and serious injury as that indicated above. This arises principally from the dryness and heat of the atmosphere during summer in most of our grape-growing regions. The dryness of our climate is undoubtedly the cause of our immunity to Peronospora, Anthracnose and Black Rot, and while Oidium requires less moisture than these diseases for its development, it spreads more rapidly and is more difficult to control in a moist atmosphere than in a dry one.

At the same time, the Oidium does far more harm, even in California, than is usually suspected, and in certain regions and certain seasons may totally destroy the crop and diminish the crops of following years by injuring the vine.

There has been a recrudescence of the intensity of this disease both in Europe and California during the last few years. This is due, in all probability, not to any change in the fungus or of the seasons, as has been suggested, but to the neglect of regular sulphuring by the grape growers, who have become careless after years of comparative immunity due to more or less general treatment for the disease.

While most grape growers in California sulphur their vines in some way, many of them do not succeed in completely controlling the disease and are often doubtful of the utility of the treatment. Where good sulphur does not give immunity it is because it has not been applied in the right way or at the right time. Many growers who do succeed in keeping their vines free from Oidium do so at the expense of far more sulphur and labor than are necessary.

Description of the Disease.

This disease, usually called Mildew in California, is caused by a fungus belonging to the same group as the fungi which cause the mildews of roses, hops and apples and is generally referred to as Oidium in Europe. The disease known as Mildew or Peronospora in Europe and the East is totally different and caused by a fungus of very different character. In order to distinguish the two, the Oidium is sometimes called Powdery Mildew and the Peronospora, Downy Mildew. As only one exists in California, the use of the word Mildew should lead to no confusion, though perhaps it is best to adopt Oidium as the name of this disease.

Symptoms and Effect on the Vine.

The Oidium attacks all herbaceous parts of the vine,—leaves, canes, flowers and fruit. In the spring, the young leaves which are attacked show at first whitish patches about one-quarter of an inch in diameter on the upper or lower surface.

As the disease progresses these patches run together until a large part of the surface of the leaf may be covered with a grayish white mildew. The leaf ceases to grow and curls up towards its upper surface.

As the shoots lengthen, the canes may be attacked in the same way. The patches of mildew appear usually near the bases of the canes and are difficult to see until they acquire the gray tint. In severe cases, the fungus may completely cover the whole surface of the cane, but it is usually confined to patches. If these patches are rubbed the fungus comes off completely. The places where it has been, however, will turn dark later owing to injuries to the superficial cells of the bark.

These marks, at first brown, later black, are usually branching or fern-like in form, showing the points of attack of the fungus. If the canes are atacked when young, they fail to mature properly and often turn black over their whole surface. It is this form of Odium which has sometimes been mistaken for Anthracnose in California.

Later, the blossoms and fruit may be attacked. When the blossoms are attacked they fail to set, and if the berries are attacked when very small, they will fail to develop and will drop off. If the fruit reaches nearly full size before being affected, it continues to develop, but irregularly. The parts of the epidermis injured by the fungus become hardened and cease to grow. This results in irregularity in the form of the berry and in severe cases in cracking.

If this cracking occurs early, the grapes dry up completely before ripening. If later, they may develop sugar and can be used for wine making, but the crop is diminished in volume. In moist seasons the berries which are cracked usually become the prey of blue mould and are completely destroyed.

After the grapes have lost the green color due to the presence of chlorophyll in the skin and have commenced to ripen they are not attacked by Oidium. The markings and blotches which are often seen on ripe grapes are due to injuries to the skin caused by the presence of the fungus on the grapes before they ripened. If the attack has not been early or serious enough to prevent the grapes reaching normal size they may still make good wine. The markings, however, are very objectionable on table and raisin grapes and decrease their value.

Tokay and Muscat grapes often show the dark, fern-like markings characteristic of the disease similar to those shown on the canes. When abundant, these markings, which are accompanied by a thickening of skin, injure the appearance of the raisins. Where the skin of the Muscat grape has been attacked by Oidium it will remain smooth after drying and not show the fine wrinkling characteristic of the finest raisins.

A vine of which the leaves are badly attacked has a peculiar color and wilted appearance. This appearance is only shown when the conditions of temperature and moisture are favorable to the growth of the fungus on the exterior leaves. This can occur only at the beginning of the season in the warmer and drier parts of the state. When the air is hot and dry the fungus cannot grow on the outer leaves. The proper favorable conditions, however, may still exist in the interior of the vine. For this reason vines may look perfectly healthy from a little distance, while the fruit and the bases of the canes may be covered with Oidium. A vine which is badly attacked has a moldly smell readily perceptible to many people.

Description of the Fungus.

The botanical name of the fungus is Uncinula spiralis (Berkeley and Cooke), and it belongs to the family or group of Erysiphae. All the members of this family are parasites which live upon the outer surfaces of leaves and other green organs of plants. The white "mildew" which they form on these surfaces consists of the branching threads or mycelium, which constitute the vegetative body of the fungus.

This mycelium grows only on the surface, unlike the mycelia of Peronospora and other parasitic fungi which enter the tissues of the host plant. It obtains its nourishment from the epidermal cells of the plant attacked, by means of suckers—haustoria—which penetrate these outer cells. The outer cells thus attacked become dark colored. The fact that the Oidium does not penetrate the tissues of the vine much facilitates its control and renders its destruction possible at any stage without injury to the host plant from the remedies applied.

Continued on Page 459

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P. S.—See Article in Cultivator on Page 550, issue of December 6th.

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Deciduous Fruit Culture

By J. W. MILLS

CANNING PEACHES.

IT has been a problem in the past, to know just what to plant in the line of canning peaches.

The canner will advocate one kind one season, and if he happens to get some fruit that strikes his fancy as a little better than the average, he advises prospective planters to get that variety even though there are none on the market in quantities for even a small commercial planting.

The nursery men knowing how such things go, refuse to be drawn into the quandary further than growing a few of varieties other than the standard sorts. If they did otherwise, we would not have had any nurserymen in a few years. They would have become bankrupt.

The Best Kinds.

For a number of years, Lemon Cling was demanded by the canners as a leader for fancy fruit. It brought the highest price of any yellow cling for a number of years.

Its one great fault was its small size. The grower has difficulty in coaxing it up to canning sizes and there are always a large percentage of culls due to small size. It is, or was till the Phillip's Cling came out, the best looking canner peach to be had.

The bright color and clear juice gives it an attractive appearance that takes the eye of the jobber. Growers generally consider any good-sized yellow Cling as good as any and especially if he raises it himself.

The fact of the matter is, there are but two or three yellow Clingstone peaches that show up well after they get on the Eastern market. Little particles of fiber separate from the body of the fruit and by the time the fruit gets across the continent and in the hands of the dealer at the other end, the jar of the cars and trucks produce a cloudy juice.

Growers do not appreciate these facts and are prone to blame the canners for being changeable and unreasonable in their requests regarding varieties. When he follows his fruit across the continent and sees these things and his brand is lowered on the standard even slightly, it counts against both the canner and grower.

A Good Test.

A Southern California canner made tests with several varieties of yellow Clings some years ago, and when these peaches were put in glass exhibitions jars, all but one variety had to be placed in water in order to get a clear, bright appearance. One variety, yellow Tuscan had a bright, clear syrup. Seller's Cling came next in quality.

Tuscan Cling was one time an extra fine canning peach, but is now being left in the race with formally top-notch peaches. This variety was given about ten years ago, but since that time it has brought good money and in fact has paid better than any peach in Southern California.

It is very prolific and is inclined to overbear where other varieties are practically failures For this reason it will be the leading canning peach for the southern end of the state till some untried variety proves to be its superior.

Phillip's Cling has now been on the market for a number of years and has proven that it is the best yet for Northern California. Aside from having good canning qualities that the best of other varieties have, it has a small pit which gives even the smaller sizes a larger appearance than the same sizes of other varieties. There is also more net weight in a given amount of Phillip's Cling, there being a comparatively thick flesh.

The devouring appetite of the law-protected quail is causing great uneasiness among the alfalfa growers in Cottonwood Creek, in Tehama county. It is said these birds are eating up whole patches of alfalfa.

PLACER COUNTY ORCHARDS.

I believe that one of our very popular and almost universal ways of extracting fruit from our hillsides is radically wrong and calculated to soon render it almost impossible to get any more good fruit, except from new land. If this is true it is certainly a subject worthy of discussion and of careful thought on the part of land owners and of any others interested in a wise public policy.

I refer to the practice of thorough and industrious plowing and cultivation of these hillsides, in which we have always taken such a virtuous delight and in which nearly all the authorities on such matters have constantly encouraged us. (The writer is somewhat wrong on this point. Not all good authority in California today advocates clean winter culture. Ed.)

When we first clear a Placer county hillside, in the fruit district, the soil contains a liberal supply of all of the chemical elements necessary to produce large crops of the finest of fruit.

Washing out the Soil.

Heretofore the ideal of the "good husbandman" has been to remove every vestige of grass from his orchard and when he has done that there is nothing to hold the soil in place and its lighter element, the precious humus, soon finds its way into one of the muddy torrents that flow from the lower side of a "well" cultivated orchard on a rainy day.

After watching this process for years I am convinced that the deterioration of the soil of our hillsides is due to this cause almost altogether and not to the chemical exhaustion we are told of by the fertilizer man.

Positive Proof Present.

In proof of this conclusion I may say that a hillside that has been cultivated for a number of years will show almost the same deterioration whether it has produced heavy crops or no crops at all; that the producing power has diminished just exactly as the visible supply of humus has disappeared, and that this has disappeared just as the color of the soil has changed from a rich dark brown to the color of the underlying rock, generally a glaring red.

During this same time the soil has lost its mellow, loamy character and has taken on many of the characteristice of Portland cement, consisting simply of particles of rock, big and little, with very little of anything else between. A little careful study of any of the older orchards (well cultivated ones) will bear me out.

The Writer's Conclusions.

In endeavoring to remedy this trouble I at first aimed to plow under as much green grass as possible, but it didn't do much good and, when I came to think of it, I found that Nature don't use green grass in her work. She allows it to grow to maturity, to harden, dry and die before she begins to make soil of it.

And so I evolved my scheme of plowing alternate "middles" on alternate years, "crossways" of the natural flow of rain and irrigating water, and of allowing Nature a chance to work in her own way to repair the damage which I had wrought. Now, when a particle of humus washes off a plowed "middle" it is caught by the grass on the unplowed "middle" below and the water leaves the bottom of the orchard almost as clear as it leaves one of Nature's grassy hillsides.

When I started this plan five years ago I could scarcely average two inches of grass, now I can get nearer two feet. The fact of lying unplowed for a year and then the plowing under of a good crop of decaying matured grass every second spring, has a most noticeable effect on the soil. It is fast taking on the appearance and characteristics of virgin soil and I have lately found experts who say that, when soil is in this condition, Nature has little trouble in providing the chemicals.

At first this plan required a little more water but now not so much. The

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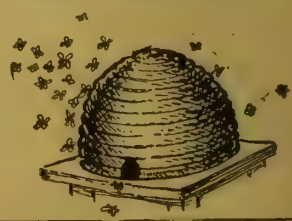

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plowing of alternate "middles" acts as a protection from fire and altogether the plan might be worth a trial by some of the wise ones. I know of several places where something will have to be tried soon.—G. Geraldson.

FUMIGATION FOR THE DESTRUCTION OF INSECT PESTS.

The fact has been well established that for the thorough extermination of the insect pests that infest our cultivated trees and plants there is nothing that equals the fumigation with hydrocyanic acid gas.

This is particularly true of those insects that infest our greenhouses. Here spraying with the ordinary fungicide and insecticide mixtures is not available, because of the injury to the appearance of ornamental plants and to the paint on these structures. Fumigation then becomes the only available and efficient remedy.

This is also true in the case of the nurserymen who wish to avoid the risk of sending out infested stock, even where they are reasonably sure that their stock is not infested. In fact in many states the law now requires that all nursery stock shall be fumigated before shipment. While the great expense of tents, etc., may operate in many instances against efforts at fumigation in the orchard, there is no doubt that even there the complete eradication of the pests would make the process cheap, as compared with the partial destruction of the trees by spraying, since one fumigation would certainly last for the season at least.

But in the case of the florists and the nurseryman, fumigation is really the only effective remedy. Hence it becomes necessary for them to study the methods and materials used in order to learn the most economical and practical way of doing the work. The usual method has been to develop hydrocyanic gas by dropping cyanide of potash into sulphuric acid in a closed house. But lately there has been an effort made to show that cyanide of potash may be more economically replaced by the cyanide of sodium. When a nurseryman is told that 100 kilograms of cyanide of sodium will produce as much hydrocyanic gas as 132 kilograms of cyanide of potash, he is apt to at once jump at the conclusion that the sodium cyanide can be used as a cheap substitute for the potassium salt. But a test will prove that the actual amount of the gas liberated is less than tht amount of gas released by the potassium cyanide, because when the sodium salt is treated with sulphuric acid, a residue forms consisting partly of solidified sulphate of soda and partly of undecomposed cyanide of soda.

On the other hand, the residue left from the use of potassium cyanide is not a solidified mass of useless material, but crumbles to a powder. This powder is not a valueless article to the cultivator, like the sodium sulphate, but is the potassium sulphate that commands a high price as a fertilizer. This fact that the residium from the potash salt is a valuable fertilizer will of itself do away with all claims made for the superior economy of the sodium cyanide, even if the claims for a larger production of gas had to be granted, for the residue resulting from the use of the sodium cyanide is a perfectly worthless article to the cultivator, while the residue from the potash salt is sulphate of potassium in a readily available form that would command on the market over $2.50 per 100 pounds as a fertilizer. From this we see how important it is for the grower to study all the actual facts in connection with the process.—W. F. Massey,, Editor of "Practical Farmer."

If the weather changes to clear and warmer the chances are still good for a peach crop about Newcastle. Elbertas are curling badly and may be defoliated. However, if the trees are vigorous they will push out new foliage and mature a good crop, other conditions being favorable.

Trees are injured by too much irrigation and not sufficient cultivation.

GOVERNMENT AID FOR ORCHARDS.

Among other matters provided for in the Agricultural Appropriation Bill passed by Congress is a special appropriation for the purpose of investigating the thrips in California. The thrips has become a serious pest especially in the prune orchards of the Santa Clara valley in the past few years, and it is to be hoped that the federal investigation will develop some practical method of checking it. The thrips is an exceedingly small insect, barely visible to the naked eye, and its favorite haunt is in the opening blossoms of flowers, especially in those of the plum family, where they congregate in enormous quantities and devour the essential organs of the blossoms, thereby destroying their fertility and at the same time destroying all hopes of a crop. At the present time we know of no effective parasitic enemy of this pest and of no effective artificial remedy, and, as it is a very serious menace to our fruit growers, we have cause to be pleased that the government has taken up the work and to wish it every success therein.

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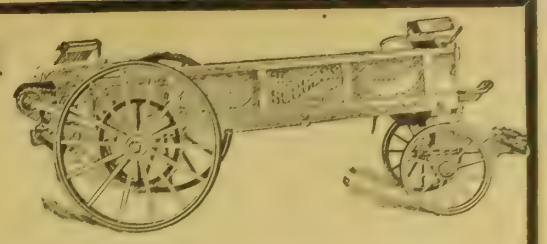

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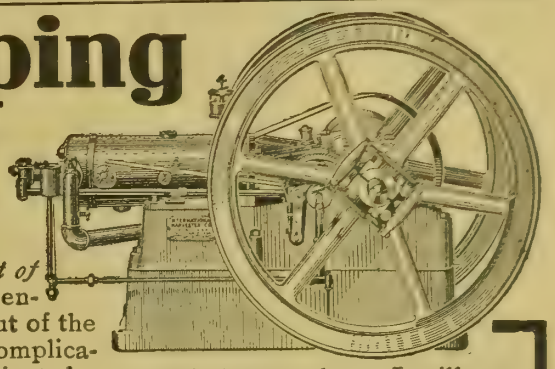

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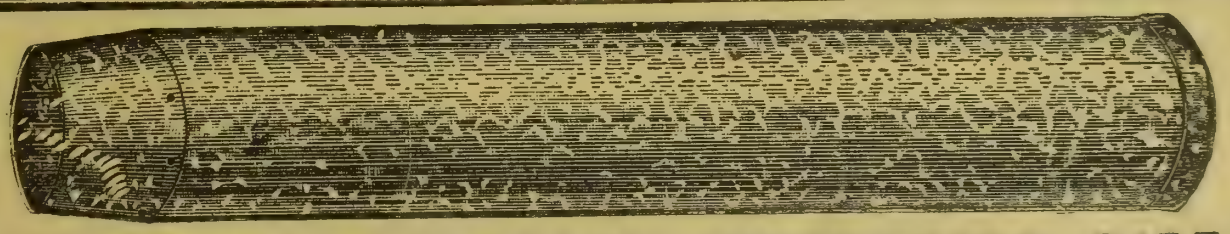

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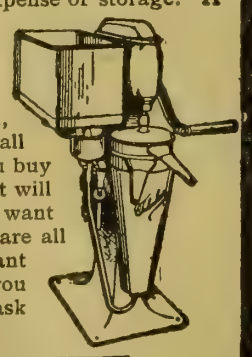

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Live Stock and Dairy

By Mrs. Minna E. Sherman, Fresno, Cal.

MAMMITIS.

THE dairyman calls this trouble with a cow's udder garget. The spring time brings many cases; usually, however, they are of a wild type. When the udder is found to be inflamed it should be bathed with hot water or fomented.

A simple equipment for this purpose is a small coal oil stove and teakettle to hold water. The oil stove will keep a kettle of hot water at the boiling point, then a pail of hot water is carried to the cow's side with pieces of woolen blanketing about a yard square, one piece is wrung out of the boiling water and held closely over the udder, when it becomes cool the other piece is used hot, never leaving the udder uncovered for more than a minute at a time.

Keep the water hot in the pail by adding to it from the kettle from time to time. After twenty minutes of fomenting, gently milk out all the milk that will flow, then rub the udder with olive oil, or hot lard, or use the following lotion after the hot fomentation: Acetate of lead, half an ounce; sulphate of zinc, half an ounce; soft water, one quart, shake before using and rub the udder with the bare hands until dry.

Protecting the Udder.

Cover the udder from the air by using a doubled flour sack. This can be loosely run around the edges with a piece of string to make a bag, then draw it over the udder.

Use a piece of soft rope to hang the sack from the cow's back. A piece of folded sacking tied under the rope and over the center of the cow's back will keep the rope from chaffing the skin over the backbone. One, two or three fomentations a day will soon bring the udder into healthy conditions.

Internal Medicine.

To help reduce the inflammation by cooling the blood, give one to one and half pounds of Epsom salts with a couple of tablespoonsful of ground ginger, dissolve the salts in half a gallon of warm water and drench the cow.

The usual cause of garget is cold, for the udder is not full of warm blood as it is far from the heart and lungs—it is really an extremity. When the cow lays down on damp ground and the udder is engorged with milk-making material the circulation is poor and a local chill is readily caught. Garget may be produced by blows from cruel milkers, or it may come from being horned or butted by other cows; sometimes it comes from mere over distention of the udder from too much milk.

Frequent Milking.

The heavy milking cow should be relieved of her milk three times a day, during the flush of freshness when on green pastures.

A cow that gives over thirty pounds a day when fresh milked three times a day will give an increased flow of milk. It pays to make it a business of having every cow milked three times a day when fresh; even heifers are developed rapidly and the good habit of large yielding is established early in their lives. I was told that the cows that are now making records of over a pound of butter fat a day, eight or ten months from calving, were all milked for four or five months three times a day even as heifers. It is only with the milk-bred and well-fed cow that this is worth while to put into practice.

Acute Garget.

When the udder is greatly inflammed the milk may be curdled and heavy curds formed; if, when the cow has had the udder thoroughly fomented, the milk comes in shreds and strings and finally stops flowing altogether, the case is a bad one and must be promptly believed if the udder is to be saved.

If the case had been promptly handled with hot fomentation and then kept milked out this further complication would not have occurred. Sometimes the milkers will conceal the condition of a cow and the case becomes bad before it is discovered. When the teats are choked with curd then the milking tubes must be resorted to—to help clear them out.

Milking Tubes.

Every herdsman should have four silver milking tubes, as they may all be at times needed. It is necessary that the tubes be bacterially clean or else the case will be aggravated instead of relieved.

Tie a bit of thread to each tube and put them into a kettle and boil them well. Have a narrow wide mouth vial full of carbolized vaseline, put the hot tubes into it and keep them there until used. A rubber bag with a long rubber hose is used to flush the udder with. Run hot water with a corrosive sublimate tablet dissolved in it through the tubing and bag to sterilize it. Boil a kettle full of fresh water, putting a teaspoonful of baking soda to each quart of water. When boiled stop the nose of the kettle with a bit of cotton and take the kettle, the milking tubes and the fomenting pail and bits of blankets and proceed to the barn.

Treatment.

At the patient's side milk out first gently all the fluids that will pass the teats. Then insert carefully a milk tube into each affected teat, avoid touching the part of the milking tube that is inserted with the fingers, holding it by the lower end.

Fill the rubber bag with the water from the teakettle that has the baking soda in it. The temperature of the water should be about one hundred degrees. Fill the bag, attach the hose to the end of the milking tube, and let the water flow gently into the udder. When all the water has passed into the udder that it will take, draw out milking tube, lay to one side, and if another teat requires treatment take a fresh tube from the carbolized vaseline and repeat the process. The milking tubes must be sterilized before using again.

Fomentations.

The udder is then well fomented as before described, and then is milked out again, this time drawing out the soda water which it will be found has acted on the curds in making them soluable.

If the calf is not too old it should be allowed to nurse for a few days. If the cow is a heavy milker, draw some of the milk twice a day and let the calf stay by the cow. The maternal instinct is strong and the cow will allow the calf to have its rightful portion even if it is a little painful. If the milk is partly removed by hand milking the calf will be hungry enough to be persistent in taking the milk as fast as formed.

Abscessing.

The quarter of the udder affected may become greatly swollen and finally form an abscess, the pus formed will burrow its way downward and break at the lowest point usually at the base of a teat, it leaves a raw opening, sometimes the teat drops off entirely.

A Case at Home.

On the ranch a heavy milking cow freshened during a severe illness of a member of the family; neither the wise man or the madame were able to see after this cow for several days. The udder was greatly inflamed, the cow was in a high fever, no remedies availed, and in twenty-four hours gangrene of the udder had set in; the usefulness of the udder was gone, and the treatment was to save the cow's life.

Creolin was sprayed onto the diseased portion freely, and in forty-eight hours the diseased portion of the udder dropped off, leaving only one quarter. The portion left was healthy, and the raw surface was kept dusted with iodoform, when it healed rapidly and the cow was saved. This cow from one teat and a quarter of an udder is now giving 26 pounds of milk daily. This is nature's way, she will develop that remaining portion of the udder to a surprising extent if

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helped along with careful milking. It will be of interest to see how much more this cow will develop, as she is now giving half a normal flow from a quarter of an udder.

Usually Fatal.

The experiment is one that is not often tried for usually a heavy milking cow with an udder in the condition that this one was in dies. This cow for twenty-four hours was in a critical condition.

The wise man took his rifle to the corral to end her sufferings at once but she turned and looked at him with her mellow eyes, he put away the rifle saying: "She shall have her chance, for her eyes look too much like a woman in pain. I cannot shoot her." The next morning the udder dropped away and left a clean, healthy surface, the fever passed, and the cow was convalescent.

THE MILKING MACHINE.

The following summary of results of bacterial investigation in connection with the use of the milking machine is taken from a bulletin of the United States Agricultural Department:

1. Unless sufficient care is used in cleaning the machines, decaying milk and bacteria accumulate in the rubber tubes and contaminate the milk as it passes through them.

2. The few dairymen now using these machines are not exercising sufficient care in washing and sterilizing the machines to keep them in sanitary condition; their milk is therefore of poorer quality from the sanitary standpoint than that drawn by hand under the same stable conditions.

3. Good sanitary conditions in a stable may be completely counteracted by the insanitary conditions of the milking machine.

4. When kept in fairly clean condition the machine-drawn milk contains decidedly smaller numbers of bacteria than the corresponding hand-drawn milk.

5. When the machines are not well cleaned both the number and percentage of acid-producing bacteria are higher than in the hand-drawn milk, but when they are fairly well cleaned both the total number and the percentage of these bacteria are decidedly lower than in the corresponding hand-drawn milk.

6. Both the total number and the percentage of liquefying bacteria found in the milk were in most cases greatly reduced by the use of the machines. This fact is of special significance in milk designed for direct consumption.

7. When properly cared for, drawing the milk by means of the machine increases its keeping quality.

8. Washing the machines with cold water and then with hot water containing sal soda is not sufficient to keep the rubber tubes clean. Under this treatment the inside of the tubes becomes coated with decaying milk, thus forming ideal conditions for the multiplication of various species of bacteria.

9. Scalding the machines by pumping boiling water through them just before use had little or no effect in reducing germ content of the milk.

10. Boiling in clear water for three-quarters of an hour was not sufficient to keep the rubber tubes in a sterile condition.

11. Subjection to steam without pressure for thirty minutes was not sufficient to sterilize the rubber tubes.

12. Placing the rubber parts in brine for several hours after being washed reduced the germ content of the machine-drawn milk to about one-half that of the milk drawn by hand.

13. Boiling in water containing a small amount of powdered borax had about the same effect in reducing the bacterial content of the milk as did the brine treatment, but the use of borax is dangerous unless extreme care is exercised.

14. The machines may be very effective in the production of sanitary milk if they are properly cleaned and sterilized.

15. The results of these experiments indicate that the machines may be kept in such an insanitary condition that the keeping quality will not be improved, but may be seriously impaired. They also indicate that with properly cleaned and sterilized machines the keeping quality of the milk may be very materially improved.

SEPARATOR CREAM.

The following nine terse advices are synopses from as many articles on the subject published by the "Cream Bulletin" published at Stockton:

1. Keep cows, barns, etc., free from odors. Before milking each cow rub sides and udder with damp cloth. Milk with clean hands and never wet teats. Don't smoke while milking.

Keep separator and house clean and create a draught through it. Separate while milk is warm. Never mix warm and cold cream. Cool cream to 60 degrees. Set cream in tub of cold water. Wrap double barley sacks around can; wet them thoroughly and set in draught. Pour cold water on sacks once or twice a day. Cover can with clean, damp cloth or fine screen. Skim a 35 to 40 per cent. cream. Heavy cream keeps better and leaves more skim milk for the dairyman.

2. Keep separator and cans perfectly clean. Cool cream before putting in delivery can. This can be done by using home-made cooler (a light frame, covered with burlap) and allow water to drip from vessel on top. Place cooler in shade, where air can strike it. Heavy cream is best for keeping in good condition.

3. Cream can is placed in cold water as soon as separated and thoroughly cooled. Cloths wrung out of cold water fastened around can; or place cans in home-made cooler during day. Sew grain sacks around cans and plunge into cold water before cream is poured in.

4. Keep everything clean and sweet. Use two separate vessels to hold cream and set in tub of cold water, changing it every 12 hours, keeping tub where current of air will circulate. Cream should test from 45 to 50 per cent. Do not mix cream until cool.

5. Keep separator and milk vessels clean. As soon as cream is separated place can in cold water. Stir cream gently until cool. Let stand in water over night. In the morning run cream into separate vessel and treat as night before. Allow it to stand 30 to 40 minutes before mixing.

6. Use clean pails, cans and milk strainers and place cloth over strainers. Separate twice a day. Put cream in clean can and give it plenty of air, then set in cool place. Send to creamery every 48 hours.

7. Urges perfect cleanliness in utensils. Place can of cream near an open window, preferably northwest, and get free circulation of air. Cover can with thin, damp cloth. Wrap can in heavy, wet cloth or sack. Keep cream well stirred, twice a day, at least, before new cream is added.

8. Clean and scald separator. Put cream in separate vessels and set in cold water in cool, shady place. Cows' udders should be brushed. Separate twice a day.

9. Keep cows' udders, stanchions, buckets, separators, etc., thoroughly clean. Wash separator after each skimming. Cool cream as soon as possible. Keep cans in cold water. Never mix cream until thoroughly cool.

A THALHEIM PLAN.

In reply to your request in the Cream Bulletin for articles on best method of handling farm separator cream, I will try to describe my plan:

The first requisite to keep cream sweet and in a good condition is cleanliness with everything where cream comes in contact. After separating it, the cream has to be cooled as quick as possible, stirring it several times while cooling. Never add warm cream to cold, then keep it as cold as possible, by placing in a so-called cooler, and always keep the cans well covered while carrying the cream to the creamery or station, to keep off the sun and dirt. If this plan is followed, the cream will reach the creamery in a condition to be manufactured into the highest grade of gilt-edged butter.—Wm. Kroeger Thalheim.

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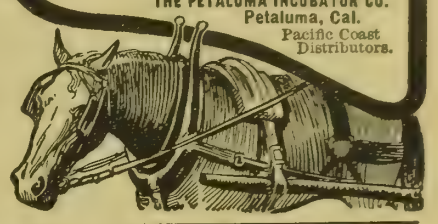

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"L. J. Harbinson interested himself in this matter three years ago and secured from the state university a number of young trees for the purpose of testing their adaptability to this section. Each year since then he has obtained more, until now he has about 3000 trees of different varieties. As a result of his observations up to the present time, he thinks the Red Gum (E. Rostrata) the most promising. These trees are rapid growers and are not in the least affected by the heat of summer or the cold of winter. The Sugar Gum (E. Corynocalyx), on the other hand, will stand neither. The Forest Red Gum (E. Tereticornis) has not yet been tried, but Mr. Harbison believes it will do well, while the Red Mahogany (E. Resinifera) also seems to be adapted to this climate. The Blue Gum is not considered fit for anything except stove wood, and on account of its grain, is exceedingly difficult to work up for that purpose."

"Two fine specimens of the Red Ironbark (E. Sideroxylon) can be seen on G. O. Coburn's place near town. These trees are about thirty years old and measure about twenty inches in diameter."

The above article was taken from a northern paper, but we neglected to observe the name. It would not pay to root out blue gums where now growing and plant to other kinds, for such plantations will prove sufficiently remunerative to satisfy the owner.

There is no doubt, however, but better kinds should be planted in the future, both for fuel and timber purposes. The Blue Gum outstrips all others in rapidity of growth, but even for fuel is not so lasting as any of the other species most common.

On the contrary, it has not proven harder to work up than other species; neither is it true that the Sugar Gum will not stand the summer's heat, for in Arizona it has withstood, successfully, heat such as no part of California ever has. E. rudis seems to bear up under most unusual heat. E. sideroxylon, above mentioned, will not stand nearly so much heat as the Sugar Gum, and we fear there must be some question as to the identity of some species above listed.

Eucalyptus rostrata, the larger of two "Red Gums" and the one usually known by that name in the local trade, is one of the best all-round timber trees to be found. Perhaps no other Eucalypt will grow in such a variety of soils and situations. "It will thrive in soil periodically inundated for a considerable time," yet does well with us in the driest places. "The timber, among that of Eucalypts, is one of the most highly esteemed in all Australia, being heavy, hard, strong and extremely durable, either above or under ground or in water. For these reasons it is highly prized for fenceposts, piles and railway sleepers; for the latter purpose it will last at least a dozen years, but if well selected much longer. Whenever practicable the Victorian Government has discarded the use of any other timber for railways and bridges. It is also extensively employed by ship builders. Also used by wheelwrights and other mechanics. Also best for withstanding attacks of teredo, white ants and other insects." What more could be said for a timber?

Orland shipped three cars of mules last week.

TRANSPLANTING FOREST TREES

The tree planter should endeavor always to transplant his trees with the least exposure of the roots.

The root-hairs, or feeding cells, of the roots of a plant will shrivel up and perish if exposed to the dry atmosphere for even a few minutes.

The roots of conifers are particularly sensitive, so that these require more careful attention in transplanting than do broadleaf trees. Some of the broadleaf species may have their roots dried out and shriveled, yet with proper attention revive and live; but the conifers, once dried, rarely regain their vitality.

The Proper Season.

The best time to transplant young trees is just before growth begins in the spring, when the seedlings are likely to receive the least injury. In general, planting should be done as soon as possible after the frost is out of the ground, the exact period depending upon local climate and soil conditions. In parts of the country where the winter is the only season with an abundant rainfall, the transplanting should be done during the rainy season.

Conifers, with the exception of the deciduous species, such as European larch and tamarack, may be safely planted somewhat later in the season than broadleaf trees.

It is always well to choose a wet or cloudy day for transplanting, but if the work must be done in dry weather the nursery beds or trenches should be thoroughly soaked a few days before removing the trees. By establishing a home nursery close to the planting site the disadvantage of shipment may be avoided, some expense may be saved, and the time for planting may be considerably extended.

The last point is often of importance, because it may be inconvenient to drop other work in order to give a shipment of trees the immediate attention they require. Home-grown stock may be left in the nursery until a favorable opportunity for getting out the trees occurs.

THE AMERICAN CHESTNUT.

The chestnut is distributed throughout the eastern part of the United States at elevations varying from sea level in Massachusetts to 5000 feet in North Carolina.

It ranges from southern Maine southward through New England, but in this region is most abundant in the lower valleys of the Merrimac and Connecticut rivers. Except near the sea, it is common in Rhode Island and Connecticut and as far south as Delaware.

It is found also in the Province of Ontario and in the Eastern States, especially in New Jersey, Pennsylvania, and parts of Maryland. Further south it is found along the Appalachians to Alabama, growing well in all soils above 2000 feet in elevation but less abundantly below. In the Middle West it is confined to Michigan, Indiana and Illinois.

Large areas throughout the East, particularly in New England, New York, Pennsylvania and Maryland, are well adapted to chestnut. Outside of its natural range, however the success of this species is doubtful.

Chestnut can be grown fairly well throughout Missouri and southeastern Iowa, in the eastern counties of Nebraska and Kansas, and in the southern half of Minnesota, but nowhere on prairie soil is it long-lived or of first-rate growth.

In Colorado it grows well under irrigation, and would probably succeed in other parts of the West if well watered. If it is planted too far north the shoots fail to become woody, before they are nipped by the early frosts. The tree will endure the heat and cold of its natural home and will remain thrifty in sunny, dry situations, but is very susceptible to injury from hot winds. Chestnut will thrive on a variety of soils, from almost pure sand to coarse gravels and shales.

With the Citrus Growers

SEEDLING TREES.

WHEN seedling trees are to be used, the selection of seed becomes an important feature. Any and every orange seed should not be used. On the contrary, the greatest care should be exercised in selection.

It is not an uncommon report that seeds of sweet oranges frequently produce sour oranges, and vice versa, but this is probably never true unless the seeds are the result of hybridization. It is well recognized by growers in Florida, California and Italy that when seeds of a sweet orange are planted, trees bearing sweet fruit, of a fairly good character, almost invariably result.

Orange trees, however, are generally grown in close proximity to lemons, limes, sour oranges, pomelos, etc., and it is not to be wondered at if hybridization occasionally occurs. When hybridized with the sour orange, lemon, etc., the resulting seedlings may naturally be expected to produce sour, unmarketable fruit, or fruit with rough and unsightly skin.

While seedlings of the sweet orange almost invariably produce sweet fruit similar to that produced by the parent, there is nevertheless considerable variation wholly aside from that resulting from crossing and hybridizing. This uncertainty as to fruits, especially the finer sorts, reproducing themselves true to seed is what renders budding and grafting desirable in the orange as in other fruit industries.

Where sweet seedlings, or in fact any kind of seedlings, are to be grown, the seeds should be taken from selected seedling trees known to produce good fruit and which are isolated from citrus trees of other varieties or species. Such selection would prevent the probability of obtaining seeds affected by crossing or hybridizing with other varieties, and make it reasonably sure that seedling trees producing good fruit would be obtained.

Pomelos, lemons, limes, citrons, kumquats and the various other species of citrus fruits are almost invariably produced true by the seed, as in the case of the orange, that is, pomelos produce pomelos, lemons produce lemons, etc. Like other fruit trees, however, the different varieties of the fruits named do not reproduce themselves true from the seed. Seeding pomelo, or grape-fruit, trees are quite common in Florida. The varieties, however, have not been so much improved as in the case of the orange, and as yet there is but little difference between the fruit of seedlings and that of the best named varieties.

The principal varieties or subspecies of mandarin oranges cultivated in Florida, known as the China (commonly called Mandarin), Tangerine, King and Satsuma, are not infrequently propagated by the seed, and with but slight variation they commonly reproduce true to the parent variety. However, they seldom average equal in flavor to the selected varieties, which must be budded, as they are not reproduced true by the seed. Seedlings of the China are said to show a tendency to form an elongation of the rind at the stem, which makes them awkward to pack. In all cases where seedlings are to be used the greatest care should be exercised to select seed from isolated trees known to uniformly produce good fruit.

THE FLORIDA WAY.

In planting a citrus orchard, the land should be selected with great care as, while citrus trees do well on a great variety of land, they, like everything else, have their preferences. It is best, where possible, to select land that is naturally fertile, and particularly such soils as have a goodly supply of humus. If plant-food is deficient, it must be supplied in the form of commercial fertilizers and, if humus is deficient, by growing some covercrop to be turned under after it has died down.

Treating Lowlands.

Land that is low, wet and undrainable, or which is underlaid with hardpan, should be avoided. The same is true of extremely open, porous soils that do not hold moisture in sufficient quantities. Land for an orange grove should be moist, but of a character that is either naturally drained or easily drained artincally. Trees should never be planted on land where water stands for any length of time and becomes stagnant.

If the land is inclined to be sour (and a good deal of the virgin soil in the South is of this character), it should be well broken and cultivated for some time previous to setting the trees. If this is impracticable, it will be better to scatter over the surface, and harrow in, lime in sufficient quantities to sweeten the soil. Lime has the effect of making available the different plant-foods in the soil and taking out the sourness. From two to five barrels of air-slaked lime per acre will probably be sufficient. It is not a good idea to use lime except when absolutely necessary, as it has the tendency of too rapidly making available the plant-foods in the soil, thus quickly exhausting its natural fertility.

Handling the Trees.

Before setting citrus trees, trim back the tops well and then trim the foliage by cutting off two-thirds to three-fourths of each leaf. This reduces the rapid evaporation of sap that is always going on through the foliage, and makes success in transplanting much more certain.

Banking up oranges with fine earth in the fall is a great protection against cold. This also helps to hold newly planted trees against force of wind. Mounds should be removed in spring.

When trees are set, or just prior to that time, it is a good idea to mix with the soil that is to be placed about their roots about one pound per tree of some good, high-grade commercial fertilizer rich in ammonia. This puts fertilizer right where the roots of the trees will get it immediately as needed, thus forcing them to make a good first growth, which is always desirable. This fertilizer should contain about 4 to 5 per cent. of ammonia, 7 to 9 per cent. of phosphoric acid and 3 to 4 per cent. of potash, and should be made up with chemicals derived from mineral, not organic, sources.

Along in the spring, say about or early April, a second application of fertilizer, about one pound per tree, should be applied, and a third application during late June or early July is also advisable.

Cultivation and Mulching.

As the trees attain age and size, a larger quantity of fertilizer should be given and after they come into bearing a fertilizer containing more potash and less ammonia will be better. For this application to bearing trees, 10 to 12 per cent. of potash, 7 to 9 per cent. of phosphoric acid and 3 to 4 per cent. of ammonia is about right.

If the trees are transplanted during the winter months cultivation should commence about the time when growth ordinarily commences and should be continued until midsummer, after which time it is better to plant a sovercrop, like beggar-weed, in the middles between the trees. A small space immediately around the trees should be kept free from grass and weeds until later in the fall.

Mulching around the trees is practiced in some sections and is often advisable, as it serves to maintain a more equable temperature of the earth and retains moisture. After the covercrop has died down, in the late fall or early winter, it should be turned under, thus supplying humus to the soil and putting the land in beter mechanical condition. Covercrops sour and in poor condition for plant growth.

Another point in connection with covercrop or mulching, and this applies particularly to sections subject to damage from frost, is that all vegetable matter should be turned under in advance of danger from cold weather. A grove that exposes nothing but clean earth to the action of frost will go through the winter in much better shape than one covered with grass and weeds.—G. L. Taber, Glenn St. Mary, Fla.

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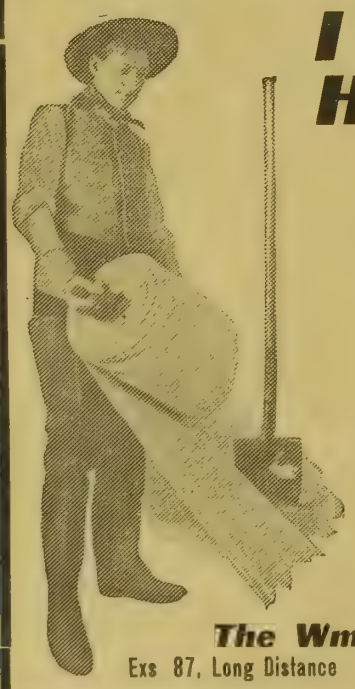

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4 inch.....	5c "
6 inch.....	7c "
9 inch.....	10c "
13 inch.....	15c "

COATED

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Bees and Their Care

KEEP BEES.

IN THIS era of diversification, the thought frequently occurs to me:

Why don't more farmers keep a few bees? I have asked the question of some of my friends, receiving the reply: Oh, I don't know anything about bees, or I would like to, but they sting so bad; or another will declare there is no money in bees, because his neighbor had some bees in boxes that he never gets any honey from. All this, and the numerous questions asked in these columns of your valued paper indicates that among the masses of the farmers there is little actual knowledge of the "busy little bee," the greatest living example of industry and economy.

There is no investment a farmer can make that will pay as high a rate of profit as a few colonies of good bees, say ten to forty stands according to growth of flowering plants or trees near by, provided he will handle them intelligently. By this I mean use proper equipment in the way of interchangeable hives, supers, frames, bee escapes, queen and drone excluders, a bee veil and a smoker. With anything like the care taken of their horses, cows, pigs or even the dogs, the bees will yield an average of 100 pounds of honey per stand per year. This is 150 per cent. profit, for it is all profit; the work is hardly worth counting, but do not misunderstand me; to get good results you must go at it right, get good bees, Italians or Carnolians preferred, on account of their gentleness. Use the standard Langstroth dovetailed hive which is made by all bee supply manufacturers, and use interchangeable frames throughout. A bee escape should be used on each stand to prevent the escape of the queen in swarming time. Queen excluders should be used to keep the queen from going up into the supers and making brood comb where only honey comb is wanted. A bee escape board can be used by those who are afraid of the sting so the bees can be driven from the supers down to the brood chamber when one wants to take out honey.

A veil is a safe thing to don whenever one goes around the bees. No honey should ever be taken from the brood chamber, for this is the storehouse of the colony.

Much valuable information can be obtained from the catologues of bee supply houses, as they tell all about their various kinds of apparatus, how to use and their merits. Before I went into the bee business I got all the catologues I could, then I studied them at odd times till I got some idea what to do and what to get.

If the farmer has no time or inclination to read and learn things, let his wife, son or daughter do it for him. By all means wake up and pick up the couple of hundred dollars going to waste every year on nearly every farm, especially in Texas, by overlooking "the busy little bee." I used to think I could not handle bees, in fact was "kind o' skeery of them," because when I was a boy a bumble bee would chase me across an 80-acre meadow to sting me, but I saw there was "money in it" so I tackled bee keeping and risked the stinger, soon found the stinger was about all booga-boo. (Not quite all) I am well satisfied in every way.—Farm and Ranch.

BLACK BROOD.

Our little friends, the honey bees, are, like other living things, subject to various diseases, some of which often have proven disastrous to the beekeeping industry in many parts of our grand country. One of the most dangerous of the bee diseases is what has become known as black brood.

A few years ago this dreadful disease very nearly extinguished beekeeping in the State of New York. At present notes of warning are being sounded by a number of the leading bee journals to the beekeepers to be on the lookout, as black brood again is lurking in many localities in many states. I therefore deem it my duty to also give a timely hint to the readers of this department. As I have myself fought a hard battle against this fiend, I know we are up against a stern reality wherever it gains a foothold, and it behooves every beekeeper to keep an eye on the brood in his hives.

Space is too limited to give a scientific discussion of the subject in this department. Bee journals and textbooks will give you information on this point. I can merely describe the symptoms and say what is to be done.

Here are the words by Mr. E. R. Root, who is an authority:

"Black brood is characterized by sunken and perforated caps of the sealed brood, but most of the diseased larvae die before ready for capping. The odor is not like that of foul brood (the odor of foul brood is much like that of boiling glue.—J. G. B.), but is more nearly that of sour, decayed larvae. The larvae, when first infected, have on the body a yellow spot, and move uneasily in the cell. After death they turn yellow, then brown, and finally black, ultimately drying down to a black scale on the lower side (cell wall). Unlike the scale of foul brood (which adheres tightly to the cell wall), this is easily removed. The ropiness, so characteristic of foul brood, is found only to a limited extent."

To diagnose positively some samples of the diseased brood, especially in the early stages, requires microscopic examination. All such samples should be sent to the Division of Entomology, Washington, D. C.

I would caution our readers to enclose all such samples in either wooden or tin cases, to conform to the United States postal laws.

TO CHECK SWARMING.

Probably the thing most annoying to the bee-keeper is the swarming habit. If the bees did not persist in dividing their forces so frequently much more surplus honey could be obtained, and the bee-keeper himself would feel more easy about his bees. In producing comb-honey in one-pound boxes it is necessary to actually crowd the bees into the section boxes, for they seem loathe to begin work in such small divisions, and this crowding is one of the incentives which creates the swarming fever. When producing extracted honey, abundant room can be given, and the swarming impulse is greatly checked. Therefore, if bees are to be kept far from the house, and cannot be given much attention, it is advisable to produce only extracted honey, which is done by giving the bees large combs and plenty of room, for it matters not whether the combs are entirely completed or not, as the honey is taken from them and the combs retained to be used.

TO PREVENT MOTH WORM.

The movable frame hive of the simplest make and Italian bees are almost a sure preventive against the moth worms. The movable frame hive gives the bees an opportunity to visit all parts of the hive, and the Italian bee is so much more industrious, and scatters all over the hive, that the moth miller has a poor show of entering the hive, and if she does, her eggs will more than likely be carried out, or should the egg hatch, the larva will be dispatched. A strong colony of any kind of bees is almost worm proof, but the Italians are the best.

If a colony loses its queen, or gets starved out and loses energy, the miller makes an entrance, and once they get into the hive utter extinction is sure to follow.

A frame hive is little better than a log gum or a box hive, unless it has a keeper behind it to look through once in a while.—W. F. M.

The heavy rains of the past ten days have very seriously damaged the plums and peaches in Placer county. The extent of the damage cannot be definitely stated, but it is known that fully 90 per cent of the Kelsey and Wickson plums and probably 50 per cent. of the Salway and Levi peaches are gone through failure to pollenate. Burbank plums and Elberta and Triumph peaches seem to be in much better shape. Other varieties seem to vary considerably in extent of injury.

The Vegetable Garden

By ERNEST BRAUNTON

TOMATO CULTURE.

TOMATOES, like many others of our cultivated plants, being the product of many generations of high culture and selection, must have suitable conditions for their development in order to be a profitable crop.

There is no doubt that more of the new and profitable varieties originate under average or medium conditions than in the extremes, either way. It would hardly be expected that a good variety would originate on very poor soil. Neither would this be likely to occur on very rich soil, because of the tendency toward excessive vegetative growth.

Since this condition would apply as well to the general crop, the aim should be to secure average conditions. Land that would produce from ten to twelve barrels of corn per acre should, other things being properly looked after, easily produce six to eight tons of tomatoes. This would be called average or medium conditions.

Almost any soil from sand to clay will produce good crops of tomatoes, but here again extremes should be avoided and, except under special conditions, such as where very early markets are to be supplied, it will be better to avoid the very light sandy soils. The soil must be in a good state of cultivation. Manures, fertilizers, lime and the growing of clover or other legumes all help to bring about this condition.

If a sod field is to be used, plow in the late fall or early spring and replow, cutting but a shallow furrow, in time to prepare for planting. Do not plant tomatoes on a piece of land which has had corn upon it the previous year, but rather let corn follow the tomatoes and later wheat or some other grain crop with grass and clover. Many farmers expect to get good tomatoes upon thin, sour land. Blight and disease in unfavorable seasons are always rampant upon such land and the grower becomes discouraged and is convinced that his soil is unsuitable for the crop, when, in reality, the failure is due to a condition readily rectified by the application of lime and manure.

BEAN BULLETIN.

The Department of Agriculture will soon issue Farmers' Bulletin 289, beans, prepared by L. C. Corbett, Horticulturists, Bureau of Plant Industry.

In this bulletin types of beans are discussed under Broad beans, Kidney beans, Lima beans, Dolichos beans, Soja beans, Scarlet Runner beans, and Velvet beans. These are divided into two classes, namely, Field and Garden beans.

Field beans are discussed under the following subjects: Preparation of the soil; planting, which includes the quantity of seed per acre, as well as depth of planting; culture; harvesting, which includes a description of the commercial methods of harvesting the crop by machinery; threshing, with a brief description of the types of machines used for this purpose, together with a brief description of the subject of cleaning and grading the product for market.

Garden beans are discussed under type of soils to which they are adapted, fertilizers used in connection with the production of this crop, cultivation, harvesting, yield, enemies and diseases. The whole matter is a brief summary of the commercial industries as they now exist in the United States of growing dry beans and garden or string beans. Maps accompany the text, showing the distribution of the two crops, and there are illustrations showing typical fields of beans grown for dried beans as well as those grown for string beans, together with character of implements used in handling these crops.

Copies of the bulletin may be obtained upon application to Senators, Representatives, and Delegates in Congress, or to the Secretary of Agriculture.

CULTURE OF ASPARAGUS.

If one is desirous of the earliest use of the bed, plants 1 or 2 years old can be brought from a gardener or seedsman, but otherwise the plants are easily started from seed. The seed is sown like any annual in drills 1 foot apart and 2 inches deep in rich, light soil, thinned to 1 inch apart when the plants are well started, and given frequent and thorough cultivation during the summer. When the plants wither, cut off the tops and cover the bed 2 inches deep with well rotted stable manure. The plants should be transplanted into their permanent bed the following spring, before growth starts. The permanent bed should be dug to a depth of at least 2 1-2 feet, and liberally enriched with well rotted stable manure thoroughly worked into the soil. The plants should be set with the crowns 4 inches below the surface, with the roots spread in setting, and the plants about 1 foot apart in the row, and given frequent cultivation, covering the bed with 4 or 5 inches of manure in the fall, after the tops have been cut off.

The following spring, and every spring thereafter, work a liberal supply of well rotted manure and 1 pound salt to each square yard into the bed before growth commences. The salt keeps down the weeds but is one of the best of stimulants for the asparagus. The shoots can be cut for the table with the beginning of the third season, though the growth will not be as heavy of course as it will be later. The shoots should all be cut, no matter how small, each time the bed is cut over, not leaving the spindling ones to run up to seed. Before cold weather sets in each fall cut and remove the tops and cover with rotted manure. Once the bed is well started it will continue equally productive for at least ten years, well repaying the minimum amount of trouble to start it, which is no more than is necessary to grow tomatoes or cabbage, that in their case must be repeated every year. Instead of classing asparagus as one of the difficult plants to grow, it should be considered the easiest.—A. B.

CUCUMBER LICE.

This pest destroys many hundred acres of cucumbers and melons each year. Every grower of these vegetables should make a study of exterminating this insect, as it means the success or failure of his entire crop.

There being a foundation for all things to build on, so there is one most important basis from which to work in destroying cucumber lice.

The grower should procure from a reliable seed house his seed of the best quality, seed that have been grown under climatic conditions best adapted to their fullest development, the plants having been free from lice. He will then secure a stand which is healthy and more able to withstand the attacks of insects.

If the grower wishes to be on the safe side, he should spray his entire crop with kerosene emulsion before the lice have appeared. Then spray the second time in about ten days. This will almost insure his crop against these bugs.

Should the lice appear he should go over his field and pull up each infected plant and burn it at once. Then spray his entire field with kerosene emulsion, using a goose-neck nozzle in order to reach the under side of the leaves. If this is done deliberately, the grower will soon rid himself of this pest.

To make kerosene emulsion, take of good hard soap (in fine shavings), one-half pound; soft water, one gallon; kerosene, two gallons.

Dissolve soap in boiling water, add the kerosene to the hot water, churn the mixture with spraying pump until it changes to a creamy, then to a buttermilk moss color. This gives three gallons of 66 per cent. of oil emulsion, which may be diluted to the strength desired. Add ten and one-half gallons of soft water to this amount to make 15 per cent. kerosene emulsion. This strength will give the best results.

Kerosene emulsion has given the best results of any exterminator known. In fact, it is the only sure way for a cucumber or melon grower to be successful if his crop is attacked by these insects.—C. W. R. in Southern Fruit Grower.

CORN CORN CORN CORN

Plant Eastern-Grown Seed Corn

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Up-to-Date Seed House

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We have just received our usual carload of Nebraska-grown hand-picked Seed Corn, and offer it at the following prices f.o.b. Los Angeles:

King of the Earliest, 85 days. The earliest Dent variety. Ears short, 12 to 16 rows, well filled. Grain long and yellow, making an extra quality meal. per lb. 5c; 100 lbs. $3.50.

Improved Leaming, 90 days. Ears are large and handsome, with deep, large grains; orange-yellow color and red cob. Per lb. 5c; 100 lbs. $3.50.

Pride of the North, 90 Days. One of the best sorts; ears have from 14 to 16 rows 8 to 10 inches in length, slightly tapering; color light orange. Per lb. 5c; 100 lbs. $3.50.

Minnesota King, 100 Days. A large-grained variety; yellow. Per lb. 5c; 100 lbs. $3.50.

Wisconsin White Dent, 90 Days. A perfect white Dent corn, of good quality, resembling the Leaming. Per lb. 5c; 100 lbs. $3.50.

Champion White Pearl, 90 Days. A fine white flint corn. Per. lb. 5c; 100 lbs. $3.50.

Early Mastedon. Having grown and sold the Early Mastedon corn four years, we recommend it as being decidedly the best of all Yellow Dent varieties. Every one who has seen it grow is enthusiastic in its praise. Large ears, deep grains, and as many as 24 rows on a cob. Eastern grown, per 100 lbs. $3.50.

The Iowa Silver Mine. A large White Dent. The grains are as large as the Hickory King, but longer, having a small cob. It is the most desirable of all White Dent varieties. Per 100 lbs. $3.50.

Red Cob, Ensilage. A large stalk with a profusion of leaves which makes it the most desirable for ensilage. Price, per 100 lbs. $3.50.

Stanford White Flint. An excellent White Flint corn. More prolific than the King Philip. It is an excellent extra early table corn. It has long ears and a small cob. Price, per lb. 5c; per 100 lbs. $3.50.

White Cap Yellow Dent. Exceedingly prolific and hardy, resisting drought much better than other varieties. Per 100 lbs. $3.50.

Reid's Yellow Dent. This is the variety that has been brought to a high state of perfection by the Illinois growers, and drew the medal at St. Louis because it averaged the greater number of pounds per bushel. Price, per 100 lbs. $3.50.

King Philip, 90 Days. A small yellow variety, very popular in this market. Price on application.

Hickory King, 110 Days. A white variety, having the largest grain with the smallest cob ever introduced in a white corn. Price on application.

Johnson & Musser Seed Co. 115 N. Main St., Los Angeles

California Cultivator

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DEATH RATE OF THE FARMER.

A writer in Harper's Weekly makes the statement that the average death rate in this country is the highest among the laboring classes, being 20.2 per thousand. Farmers come next with 17.6. Merchants and traders follow with 12.1 per thousand, and clerical and professional men average 13.5.

The mortuary tables of life insurance companies place the farmers next to professional men in death rate, and explain the singular phenomenon on the ground that, as a class, they are less careful of themselves, oftener subject to exposure of the elements, without precaution as to health and less regular about observing the laws of cating which are so essential to longevity. In the table furnished by the writer of the article in Harper's Weekly, he places the death rate of the laborer at 65 per cent higher than that of business men and farmers, 45 per cent higher than business men.

The singular part about this statement, is the fact that the writer attributes as a cause of the high death rate of the laborer and the farmer two conditions, viz.: overwork and insufficient feeding, and he urges as an element, to change the death rate, that laborers eat more and rest more. It has generally been supposed that farmers are among our best fed classes, but it seems that they are not, although from what reason we are unable to say.

Commenting on the statement made in Harper's Weekly concerning the death rate in the laboring class, the Journal of Agriculture remarks: "It is easy to see how it might be true of the laboring classes in cities, but how it applies to farmers is hard to understand. Everybody will admit that farmers work hard, but of all classes of people, they certainly get plenty to eat. Still, we will not dispute the author's statement, and if it is true we are willing to regulate ourselves accordingly. Less work and more to eat is a motto that will appeal to nearly everybody, and if it can be lived up to, conditions ought to be ideal, both on the farm and in the city. While he was about it, though, we wish the writer had told us just how we can exist by following such a rule. We can get along all right on less work, but that generally means less to eat. However, as this is about the only life most of us will have a chance to live, we should make the most of the advice given us. The sum and the substance of it all is that the world is living too fast and the sooner we put on the brakes, the slower we will be to die."

We believe irregular eating, and over-eating, and too rapid eating, has more to do in killing farmers than under-eating. In fact, we don't believe in the theory of under-feeding in the case of the farmers, who certainly have opportunity to eat if any class has, but we know, both from observation and experience, that the farmer is the most irregular eater of any class of laborers.

He comes to his meals late, oftener than otherwise, is tired, bolts his food in a hurry, and is back at his work giving his body no rest either before, during or after his meals.

In a few years his digestion is impaired, his food does not assimilate, disease finds lodgment in his body and he succumbs before his time. We all know that regularity in eating conduces to health and strength, and if the farmer will give himself time to eat, and eat at regular hours, he will lengthen out his life. He eats enough, but he does not eat right.

APRIL PLANTING.

In general, especially in seasons of unusual rainfall, our orchadists prefer April as a favorite month for orange tree planting. Many successful growers contend that it is the best month of all, but they insist that in all cases where it is possible, whether the trees are to be balled or moved with naked roots, it will be best to dig down on one side and cut the tap root, fill up the hole again and let stand for two or three weeks until the cut roots have time to heal over. In this way success is more assured.

In this present time of high prices for orange trees, the tree digger is being resorted to for orange stock, and if the digger can run through the nursery rows, cutting the roots and let stand for a week or two and then moved, they will bear transplanting much better, but in all cases of moving with naked roots they should never be allowed to get the least dry, but should be immediately puddled and kept shaded until planted, and irrigated as soon as put into the ground.

Work will continue to crowd the thrifty orchadist, for what, between keeping weeds down and cultivating the soil with a view of conserving the moisture therein, as well as increasing it by letting the warm, moist air penetrate to have its moisture condensed in the soil and stored for future use, the planter of new orange groves will find his time fully occupied.

WANT ROOSEVELT.

If we are to take the expressions of prominent men of both the great political parties of the country, as voiced in the newspapers, the people are in favor of the renomination of President Roosevelt. They want him to complete the Panama canal. They want him to finish his debate with Harriman and to squeeze the water out of the railroad stocks and bonds. They want him to teach Wall street honest methods of business. They want him to purge our great cities of graft and thievery. They want him to teach men that to water stock to thrice its value, is a crime punishable by penitentiary sentence. They want him to stop the manipulation of stock and bonds in corporations that bring ruin to thousands of business men and induce crime and suicide. He is what people call "straight goods," honest enough to enforce honesty among corporations and courageous enough to fight for principle, no matter who is hurt. Roosevelt is the reformer of the age, who Bryan says he may yet nominate for his own successor.

Really, political affiliations of individuals seem to be giving away in one overwhelming demand for Roosevelt's renomination. The insurmountable obstacle to this end seems to be the President himself.

THE ORANGE OUTLOOK.

The happiest man today in California is the orange grower. He looks over his grove and he counts his sheckles, real yellow ones, as yellow as the luscious fruit itself, by the thousands, provided he has acres enough to warrant such figuring. Since November first almost 14,000 cars of citrus fruit have been shipped and the grand work goes on. Last year to this date, over 16,000 cars had been shipped, but the transportation facilities were better, which let out about 2000 cars more than have gone this year to date. But this shortage will not be seriously felt for prices are good, the demand is excellent and the future is full of promise for the orange industry.

Oranges have come to be a necessity on the breakfast table of the Easterner, whether he be rich or only partially so. Lemons, of course, have always been a staple product, and the more people come to know their value, as health restorers and health keepers, the greater will be the demand for them. So the lemon grower takes no back seat to any industry in the state but goes merrily on harvesting his crop, and coining his money like a banker.

The fear many orange growers felt a while ago that during April their fruit would puff has not been realized; the fruit, although large, was never surpassed for juiciness nor sweetness. The fruit is arriving in the Eastern markets in fine condition, which gives it a delightful appearance and entices the housekeeper to purchase it whether she feels she can afford it or not. Prices have so far been good on the average, and the prospect now is that they will remain good throughout the year.

OUR AGRICULTURAL GROWTH.

The Department of Agriculture will be elaborately represented at the Jamestown Exposition, to be held this year on the banks of Hampton Roads, in Virginia. To this end the exhibits of grains, grasses and improved farm appliances will show the growth of the country along this line for the past quarter of a century. In addition exhibits of manufactures, industries and inventions will be selected, and the visitor will be greatly impressed with the graphic representation of the growth of the nation, from its humble beginning through the various stages of its development, to its present grandeur.

The industrial display will be classified in such groups as Manufacturers and Liberal Arts, Machinery, Transportation, Mines and Metallurgy, etc. Under the head of manufactures will be exhibited hardware, furniture, watch and clock making, textiles and many others. Under the head of machinery will come a great display of steam engines, various motors applicable to farm work, general machinery and machine and arsenal tools. So on down under the various departments will be exhibited all the industries of the country, in a concise and intelligent way.

BRYAN'S R. R. PLAN.

Mr Bryan has been giving his government railroad ownership scheme some further advertisement, by developing it in detail in a letter to a friend in Boston. In this letter he says he is in favor of "both National and State regulation, and also believes that public ownership is the solution of the railroad question."

In order to overcome the danger, as he sees it, in centeralization in ownership by the Federal government of all the lines, he prefers a system in which the Federal government will be confined to the necessary trunk lines and the ownership of the rest of the lines be left to the states.

"As an advocate of regulation of the strictest sort," says Bryan, "I can say to you that there is no danger whatever that this regulation will be carried to the point of preventing a reasonable return on money invested in the railroads of the country. And I also assure you that whenever public ownership is adopted by the states or by the nation the stockholders may expect to receive a price at least equal to the value of the physical properties of the road, but no such assurance ought to be necessary, because the public has shown no disposition to reduce railroad earnings to a point which would deny a reasonable return."

News of Country Life in the Golden West

Southern California

AGRICULTURE.

Alfalfa will soon yield its first crop at Little Rock.

The San Joaquin Fruit company has begun planting peanuts and is keeping two planters steadily at work.

Wheat and barley in the Antelope valley sown this spring is looking fine. A good crop is expected.

During the past two years the business of raising turkeys has become an important industry in the Imperial valley.

The Duarte-Monrovia Fruit Exchange has declared a dividend of one cent a pound on fruit shipped in March.

The Imperial valley farmers are now shipping string beans at 25c per pound and summer squash at 12½c per pound.

By May 1st a great many tomatoes will be shipped from the desert. There is a large acreage in and the price bids fair to be good.

The output from the Thermal packing house this season will be 75 cars of melons, five cars of grapes, 60 cars of onions and 18 cars of cabbage.

The express shipments for the week were 247 cases eggs, 1217 pounds of poultry, 1195 pounds of butter and nearly two tons of cream from Escondido.

About Thermal the valley is in a very prosperous condition. The farmers are now busy shipping onions, which are bringing a good price this season.

Kuhl & Paul, of Coachella, ran a close race with J. W. Leonard of Thermal, in shipping first string of green beans. They shipped April 12th and received twenty cents net.

Joe Hanson, on the 13th, started his harvesting machinery on his ranch near Imperial. This is the first harvesting to be done this season in the valley and probably in the state.

The alfalfa farmers of Chino held another meeting April 9. There was a good attendance and a rousing interest manifested. It was agreed that prices as previously fixed should stand.

Last season many thousands of turkeys were shipped to Los Angeles from Imperial, but with all raised in this state several carloads of the dressed birds were shipped from Kansas.

Twenty or thirty acres of summer squash are now ready for the market at Thermal. Ten or fifteen acres of cucumbers are doing finely and will be ready for shipment within a few weeks.

The first car of Bermuda onions of the season from Thermal was shipped to Los Angeles Tuesday. They were sold f. o. b. there for $1.95 a crate, which brings to the grower about three cents a pound net.

Crops around Beaumont look well, but more rain will be necessary for good results. A medium rainfall for this vicinity is better in a general way than excessive rains, such as we have had this winter.

The dairy business of the Lompoc section has been making rapid strides this past year. There is shipped from this station $9000 worth of cream every month. Most of this goes to Santa Barbara and Los Angeles.

The setting out of young orchards in the south is now over for the season, and despite the prediction of many growers of an overproduction of fruit, there has been a larger planting of deciduous fruits than ever before.

Reports come in from most of the grain growers of the Rialto section that the indications are that the crop will not be as heavy as last year. The cause is attributed to the excess of rain this winter, combined with the unusual amount of cloudy, cold weather.

HORTICULTURE.

Redlands has a lemon club.

The strawberry harvest is on at full blast at Villa Park.

Pine scale is bad on trees about San Bernardino, especially on the Monterey pine.

No doubt now about pears and apples being a paying crop about Little Rock this year.

The La Habra Walnut Grower's Association filed its articles of incorporation last week.

The almond crop about Fairmout has suffered severely by the recent frosts. All except E. W. Spencer's are gone.

The apple crop in the hill ranches back of Fairmont will be a banner one, reports were never so favorable as they are this year.

An authentic report of a ten-acre orchard at Ontario last year states that the fruit netted the owner $5000 after all expenses were paid.

The apricot crop in Orange county will be almost a failure as the last rains have rotted what the earlier rains did not prevent setting.

There has been heavy planting of apricots in some sections while in the apple sections there has been great activity in the setting out of that fruit.

There are still about 600 cars of navels to be sent out from Redlands this year, and at the rate maintained last week it will require four weeks to do it.

Tuesday the Pacific Packers' Supply Company received the first carload of its special machinery for the new box factory which is to be located in Redlands.

Redlands packers are taking the lead in protesting against the new order for car distribution which went into effect on the Southern Pacific last week.

In deciduous orchard planting, peaches have led by long odds, and chief of these have been cling varieties. This is largely attributable to the cannery demand.

A car of thoroughly-cooled oranges, packed in a car also pre-cooled, was sent East from Riverside today to test the practicability of shipping California fruit without ice.

With one exception the past week has witnessed the largest movement of oranges from Redlands of any week this year, there being 174 cars of 362 boxes each to be forwarded.

The Pacific Packers' Supply Company which owns the patents on the rawhide pulpboard boxes—has received the first carload of machinery for its factory at Redlands.

The State Insectry, which has been maintained at Anaheim the past month, was moved to Los Angeles and will continue introducing the newly-imported red and purple scale parasites.

Instead of the ordinary load of 384 boxes of fruit, the fruit contained in a pre-cooled car is 549 boxes. This extra amount of oranges to the car was made possible by the elimination of the ice chamber.

Hemet will have a very good crop of apricots this season, and already buyers are numerous offering fifty dollars a ton for the fruit. Reports are most encouraging for a good peach crop this season also.

Several carloads of Mediterranean Sweets, St. Michaels and blood oranges are shipped from the Hemet Packing Houses every week now. The fruit is absolutely without scale, is perfect and brings high prices. The navels, of which there was a fine crop, have all gone forward at fine prices.

Peaches about Santa Ana have bloomed profusely and indications are good. Pears show an extraordinary healthy bloom. Apples are blossoming. Grapes are starting. Walnuts are coming out very rapidly and are so early as to be considered dangerous for blight.

Northern California

AGRICULTURE.

Good rains in the Lakeside country Sunday make the farmers rejoice.

The poultry business near Pleasant Grove is fast becoming one of the leading industries.

The hop growers of the state are watching with keen interest the effect of the law governing their sales.

The report that the fruit crop was ruined by the recent heavy storms is untrue so far as the Uvas valley is concerned.

The registered Holstein-Friesian bull Loyal Knight of La Siesta was sold last week to F. H. S. Hersman, San Martin.

Bill Whyler, of Willows, drove 250 hogs on the scales and found that they averaged 250 pounds per head, and brought him $4375.

During the month of March Elmira farmers shipped by express 6494 dozen or 77,928 eggs and 72 cans or 5,250 pounds of cream.

P. B. Norton, the U. P. railroad representative has a quarter section of land south of Remnoy which he is planting to eucalyptus trees.

The crust has become so hard on the grain land about Salinas, that some of the farmers on the uplands have stopped plowing until it rains.

Barney Schrieber, who recently leased the Howard farm near Woodland, received a carload of horses Monday, followed by another carload on Wednesday.

Old Tulare lake is coming this way, the little blue waves are now lapping ground that has been untouched by old Tulare for over a quarter of a century.—Visalia Times.

Yolo county, especially that part of it lying closely contiguous to the city of Woodland, is rapidly becoming a favorite field for men engaged in the business of raising fine horses.

A gentleman from Lemoore stated Friday that Frank Blakely, who has between 2000 and 3000 acres seeded to wheat and barley on the borders of the lake, has a fine prospect.

The sheepmen of the state are getting anxious to have Governor Gillett appoint a State Board of Sheep Commissioners, as provided by an act which he signed and which is now a law.

George Gottwals of Central District sold two big hogs which weighed 780 pounds or nearly 400 pounds each. As the price was 8c per pound Mr. Gottwals received over $30 each for the same.

The Bank of Willows has deeded to the Glenn County Irrigated Farms Company 1020 acres of land east of Willows, which will be subdivided and placed on the market in small tracts.

Early-sown summer-fallowed grain about Woodland looks splendid, winter-sown grain is growing nicely and alfalfa is growing so luxuriantly that bumper crops are predicted, so says the Democrat of that place

That California can easily produce all the hemp that the world needs is the opinion of R. J. Shely, of Chicago, who is now in Sacramento valley looking over the prospects of establishing the industry.

The present unfavorable season for grain is giving added impetus to the tendency now prevalent among the farmers in the vicinity of Elmira and on the plains east of Vacaville to go into stock raising and dairying.

There will be but little grain raised in the valley around Woodland. One farmer who usually sows 1000 acres of wheat and barley seeded only about 200 acres this season. Other grain farmers seeded about the same proportion.

The following pedigreed Holstein cows were transferred last week: Circuela 2d, C. W. Evans to M. H. Holdridge, Modesto; Clio of San Martin, Frank H. Burke to H. S. Hersman, San Martin; Eulalie of La Siesta, Frank H. Burke to H. S. Hersman, San Martin.

HORTICULTURE.

The recent storm nearly ruined the almond crop in the upper Capay valley.

An active campaign has been going on in Sacramento county against pear blight.

Over 100 cars of oranges have been shipped from Lindsay since the first of the year.

The tent caterpillar has begun to make its appearance in the orchards of the Pajaro valley.

The Falke place, west of Redding, is to be converted into a first-class garden and poultry farm.

Experts say the apricot crop about Grinda is damaged. Peach and almond crops will also be short.

The unusual rainfall has, in many fruit growing districts, aided the development of fungus tree diseases.

Water standing in orchards is doing serious damage in some parts of the San Joaquin and Sacramento valleys.

The damage to fruit trees in the mountains and in the foothills about Los Gatos has been greatly overestimated.

J. P. Cox is erecting some stable buildings at the "villa," near Orangevale, preparatory to starting a breeding farm.

There is at present fair prospects for an average fruit crop in Sutter county with the exception of almonds and apricots.

There are nearly 2500 condemned blighted pear trees on Tyler and Andrus islands where the water is standing in the orchards.

Prunes and apples about Gilroy will be a better quality and price. Grapes were not in blossom, so consequently were not injured. Peaches will be an average crop.

The pear crop about Woodland, from present appearance, will be unusually large. The prospects are also good for an average crop of both prunes and plums.—Democrat.

The result of last year's campaign against the caterpillar in the Watsonville district is very evident in the decreased number of caterpillars coming into existence this year.

French prunes and Bartlett pears about Vacaville look promising, the peach crop is very light; the apricot crop is a failure, although there will be a few more than last year.

The crop of early peaches in Yolo county will be light, but there will be big crops of the late varieties. The heavy rains destroyed a great deal of the bloom of the early crop.

In the district comprising Grand, Tyler, Andrus and others, where owners were delinquent in the eradication of the pear blight, 30,000 trees were inspected with a loss of nearly 4000.

Governor Gillett is quoted as saying that he will go to Washington next winter and press the claim of the Sacramento river before the rivers and harbors committee for an appropriation of $400,000, as recommended by the federal engineers.

The peach orchards north of Sacramento that have been sprayed thoroughly and given good care show a fine prospect and prunes, cherries and pears have bloomed well and the fruit is setting good. Almonds will not be a quarter of a crop from the present outlook.

Excellent results have attended the campaign against the pear blight in Sacramento county, which began last winter and closed with the recent storms. Although the blight has not been thoroughly stamped out, as might have been the case had all the orchardists shown a ready disposition to co-operate in its eradication, the county commissioner considers it encouraging.

The Capital Avenue Poultry Farm, R. Walker Mantz, offers some special inducements in White Wyandottes and Columbian Wyandottes to their patrons in their advertisement this week.

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

Buy the World's Famous Egg Food No. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Haphazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultry men who have used these machines have supreme confidence in their ability to hatch and breed. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for the greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. Filcher, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clork Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

Petaluma Incubator Co.

Main Office and Factory, Petaluma, Cal., Box F.
Los Angeles, 505 South Main Street.
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Best Incubator

On the Coast—best anywhere. Made right—prices right. Guaranteed. Catalogue free. Also great **Combination Brooder.** It is great—both indoors and out.

Pacific Incubator Co.

PASADENA, and
707 So. Spring St., Los Angeles

Also for sale by
Johnson & Musser Seed Co.
113 North Main Street

Chicks Just Hatched

We ship them everywhere. Pure Bred White Leghorn Chicks from the Best Egg Producers in the United States

CALIFORNIA INCUBATOR CO., MAXWELL, MAY 27, 1906.

Gentlemen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come so far and being so long on the way without the loss of a single one, but it is an undisputed fact that such was the case. We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. CAMPBELL.

CALIFORNIA INCUBATOR CO., 907 Washington St., Petaluma, Cal.

Beef, Blood and Bone Will Make Your Hens Lay

This is not a medicine but a high grade nitrogenous food. Write for free booklet, "How to make Hens Lay." Our Poultry Foods are sold by all local dealers and manufactured solely by

The Pacific Guano and Fertilizer Co.

Also Pioneer Manufacturers of *High Grade Fertilizers.* Indiana and Yolo Sts., San Francisco, Cal. Write for our free booklet, "Farmer's Friend." Valuable to all farmers and ranchers.

Columbian Wyandottes

PEN No. 1 contains four imported females and cockerel, all very large, strong black hackles and white bodies. Sure to breed winners. Eggs $5.00 per 15 straight,

THEY ARE IT

PEN No. 2—Headed by First Prize Cock and winner of National Columbian Special, mated to six A1 females. Eggs $3.00 per 15 straight.

FRANK J. IRONMONGER **Hollywood, Cal.**

Bemis Plymouth Rocks

Barred and White

Prizes Won at Alameda County Poultry Association Show, Oakland, 1907—22 Regular Prizes and 3 Silver Cups. Can furnish best birds and eggs at reasonable prices. No incubators lots furnished

Mrs. Florence E. Bemis, 1757 19th Ave., Oakland, Cal.

THE FEATHERLY FARM ORPINGTONS

BUFF BLACK WHITE

Our yards are now mated for the season; containing winners of nearly 100 Prizes, Specials and Cups at California's leading shows. Our handsome Mating List and Catalog describes them all. Send for it today; it is free. Our birds are bred for utility and heavy egg production as well as beauty. All egg orders booked in rotation. Satisfaction guaranteed.

P. L. Harley, Box C, Redlands, Cal.

When writing advertisers, mention Cultivator.

Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

COMMERCIAL PIGEONS.

"I used to keep pigeons when I was a boy," writes a middle-aged man, "and I would like to try again. Can you give me any information on the subject?"

The writer goes on to ask many pertinent questions on the pigeon business and I think that the following from the pen of Mr. R. S. Ransom, who is making a comfortable income from pigeons raised in his own backyard will give our enquirer the information he seeks.

The amount of misinformation given on this subject is simply appalling. Why is it necessary for some people to grossly exaggerate anything said or written about Homer squab raising, when the plain, unvarnished truth presents the matter in a most favorable light. It is true that as an industry, squab raising requires less capital and less work in proportion to returns than any other business of similar character. It is not right to lead people, as some do, to believe that all that is necessary is to buy a miscellaneous lot of pigeons, place them in lofts, feed and water them regularly, and sit down to wait for the coin to roll in. The individual who embarks in the business of raising squabs for market with such an idea, is doomed to failure from the start. "My advice to the beginner would be," says Mr. Ransom, "Don't go into the business; grow into it." Make a beginning with a reasonable number of birds in order that you may know absolutely that they are properly mated when placed in the breeding pen, and that you may have an opportunity to study the birds and their habits, as your flock increases. After you have acquired sufficient pigeon knowledge, you can begin selling squabs, and from the revenue thus derived, buy additional breeders, being careful to deal only with those whose stock is equal to or better than yours. This point cannot be too strongly emphasized.

If you contemplate having a loft, you will want birds that will produce from eight to ten pairs of squabs a year, and not old played-out stock that may give you from two to four pairs or may not have fertile eggs.

In order to protect yourself in this particular, buy young and healthy birds from breeders of reliability and responsibility. Experience proves that young birds just mated are far preferable to "old mated birds," that have worked for months or years in a certain loft to which they have become attached. The old birds in many instances, will mope and pine for the old home, while the young birds will go to work without delay.

Now as to the birds best adapted to the work of squab raising, the most prolific bird and the best feeder is the Homer pigeon, and a carefully selected loft of these superior birds will show their owner an average annual return of eight pairs of squabs per year for each pair of breeders. It costs in this locality, about $1 per year to feed a pair of breeders. As the squabs are ready for market when four weeks old and sell for at least $3.00 per dozen, the reader can easily figure the profit. In this connection it should be borne in mind that unlike chickens and turkeys, the feeding of young pigeons is attended to by the parent bird, thus saving a great deal of time, trouble and attention which, in other branches of poultry raising, must be looked after carefully by the individual in charge of the plant. It seems that the pigeon has never reached that stage of thorough domestication where the young birds may be fed artificially, but like the wild birds of the forest, the pigeon is one of the few domestic fowls that attend to the feeding of their young, the first week with what squab raisers call "pigeon's milk," and then grain until they are old enough to shift for themselves. Thus one of the most troublesome parts of chicken raising is absent in pigeon culture.

The main advantages of raising Homer squab for market over the squab of the common pigeon and other poultry are these: Less competition, less trouble in attending to the young, for the old birds do all the work, larger squabs and more of them, which means a better price and more frequent sales, and when a pair of pigeons are once firmly mated they will remain so and do well for ten or twelve years unless separated by accident or disease. From a pair of first-class Homers, you can depend on raising from eight to ten pairs of squabs per year, which can be marketed at the rate of fifty cents per pair dressed, while the cost of feeding the old birds will not exceed one dollar. Pigeons lay two eggs for a setting; one day intervening between the laying of the first and second egg. The incubation requires about 10 days, and while attending to the young in one nest (there should be two nests in the loft for each pair of breeders) they generally build another nest and have eggs before the young are capable of taking care of themselves. The birds breed all the year, except during the molting season, which occurs in September and October.

The first thing connected with a business of this kind is to have good quarters for the birds. This does not mean anything expensive. An idea of the space required may be had from the following: A room ten by twelve feet and six feet high at the eaves will accommodate 40 to 50 pairs very nicely, which will be enough to keep together in one place, as too many birds kept together complicate matters. This number is all a beginner

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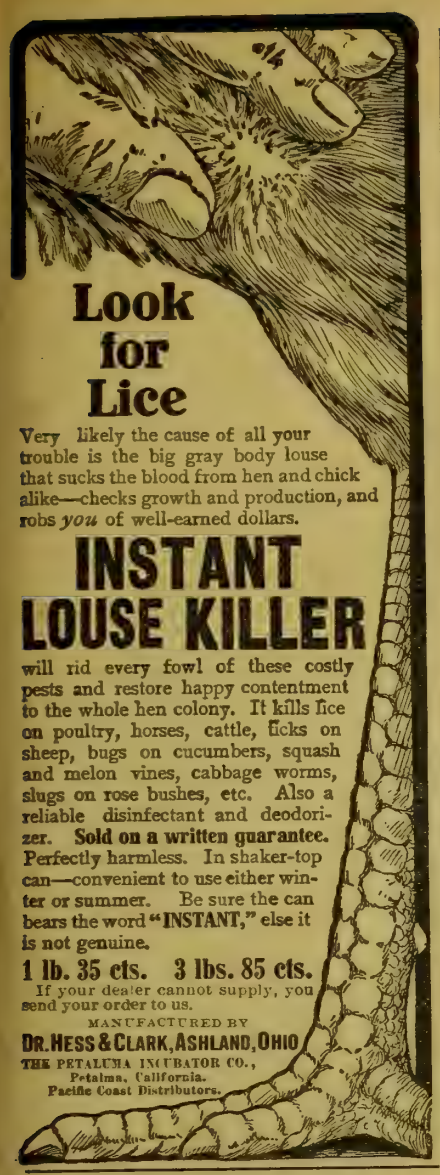

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should start with, and should not be increased until the birds and their habits are learnt, and some knowledge of the business is gained.

Pigeons besides requiring room must have plenty of fresh water. They want a good supply not only for drinking, but for bathing, which they much enjoy. They also need grit and cracked oyster shell to aid digestion and to form the egg shell; salt, and occasionally charcoal. All these keep the birds in health, without them they become sickly and die. More pigeons die yearly from lack of grit to digest their food than from natural causes. Almost all diseases of the pigeon originate from some neglect of the owner. Homers are good breeders, are a good paying stock to have, as they require less attention than chickens, but to secure the best results from any flock, the birds must have proper attention.

If you contemplate raising squabs on a large or small scale, write to the Department of Agricultural, Washington D. C. for a copy of Farmers' Bulletin No. 177. That publication treats fully and fairly on the subject of squab raising. This Government publication can be depended upon, as the most reliable work issued on the subject. If, after reading you decide to engage in the business, buy your birds from some breeder upon whom you can depend for an equal number of males and females. There are persons in Los Angeles whose experience in this respect proved mostly costly and vexatious.

CARE OF THE SITTING HENS.

It is well to see a number of hens at one time as near together as possible for two reasons: 1st, so that after testing the eggs the sterile ones can be replaced by fresh eggs and thus save time and trouble for the poultryman.

Also as a means of getting more chicks from the same hens than would otherwise be got if the eggs were not tested. The second reason is that they can all be attended to at one time with little or no more care than attending to one broody hen. It is a good plan to keep the sitting hens closed up so that they will be kept dark and quiet.

Following out this plan it will be necessary to take the sitters off every morning, feed and water them, and then see that they return to their proper places and are closed up again until the same time next morning. There is a certain way broody hens should be fed. What? Whole grain, a little water and some grit.

Don't allow them to drink all the water they need and don't feed soft feed. Both of these will keep them too open, and it is not a good thing for a sitting hen that can only get off the nest once a day.

The day has arrived for the chicks to come out. How are you going to receive them? Some hens are very restless when hatching and are liable to kill some of the chicks.

In such cases it will be well to take them away from the hen as they hatch without disturbing her, and place them in a basket of flannels near the stove, so as to keep them at about the same temperature as the body heat of the hen.

Here they can be kept until the whole hatch is out, when they can be given back again to the mother hen. Then she should be put into new quarters. Under no circumstances should she be allowed to take her brood to the nest, for if she does she will be sure to kill some of them by trampling on them. March is generally a windy, unsettled month so the poultryman had better prepare for this kind of weather, for it will surely come sooner or later.

If all the hens hatch at once, as I have suggested, 15 chicks can be given to each hen, and some of the others without chicks can be set over again, if well cared for. Where is the best place to put Mrs. Hen with her brood? There is no better place than a nice pen facing the south so that they will get all the sun there is to be had. They must be kept in a warm place, otherwise they will not grow; on the other hand they will linger on and eventually die. Keep them warm and dry. These two things are very important.

Nothing is better than a board floor

DON'T FEED the little chicks anything for the first twenty-four hours. Then feed them dry

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All stock sold on a guarantee to be as represented.

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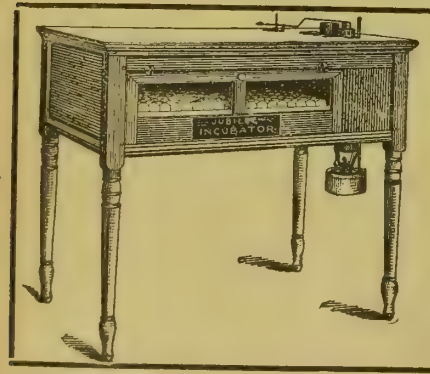

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I have purchased the entire flock and good will of the

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have carefully selected the best of this flock, which in connection with my own gives me the best lot of birds on the coast. If you want eggs from prize winners that will produce prize winners—write me. Eggs $2, $3, $5. Incubator eggs as gathered from yards $6 per 100. Special matings, $10 per 100.

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kept clean. If it is sprinkled with fine sand they will get all the natural grit they need. March chicks are early chicks and come into existence at a time before Nature intended they should. They therefore must receive special treatment.

Another question that arises is, "How are they to be fed?" For the first twenty-four or thirty-six hours of the chick's life it should not be fed anything. Nature has provided for it during this time. At the end of this time begin feeding. What should be fed? There are many things.

A favorite food is hard boiled eggs chopped fine, mixed with stale bread crumbs. Feed only a little at a time and often so that when they are fed their feed is always clean and sweet. This should always be the rule in feeding young chicks.

A fault too prevalent in raising chicks is to feed too much at a time, so as to avoid tending them so often. This is a great mistake and a mistake that brings on diarrhoea. Nothing will bring on diarrhoea quicker than eating dirty feed.

The poultryman who has early chicks wants to force them. This can be done by giving them milk, sweet milk to drink instead of water. There is a lot of nourishment in it and it will serve as a food and a drink at the same time. Keep them clean and dry if you can. If you can induce them to scratch in a nice warm place the rest will be all right. They will grow if fed well; feed a variety.

Chicks soon get tired of the same kind of food. Feed greens of some sort, chopped fine, bread and milk, egg, stale bread crumbs, little bits of cooked meat, a little mash, corn cake, or what some of us Scotch folks call Johnny cake. All these things are good for the chicks at any time, but especially so during the month of March when they cannot get out on Mother Earth to pick for themselves. —Edw. Wyatt, in Poultry Journal.

HATCHING LEGHORN HENS.

I made a number of incubator hatching tests one time that demonstated some points in artificial incubation that I have never seen in print, viz:

That Leghorn eggs will make a good hatch on lower temperature than it takes to hatch Plymouth Rock or Brahma eggs. I know exactly what I am talking about in this instance.

My tests proved it beyond my expectations. My expectations were gathered from the nature of the fowls and the difference in the size of eggs, also from little points gathered through observing the results in making hatches on mixed eggs.

My test was made with six 100-egg incubators. They were made exactly alike and all run alike in the same room and under exactly the same conditions. Before starting, I tested the therometers to make sure that there were no fractions in differences.

I set three machines with Brown Leghorn eggs and three with B. P. Rock eggs. I set each machine three times. The test was made in the months of May, June and July. Ran the temperature on the Leghorn eggs in one machine 101 and 103, on another at 102 to 104, and on the other at 103 to 105. I duplicated the plan on the three machines filled with Plymouth Rock eggs.

The lower temperature made the best hatch on Leghorn eggs while the higher temperature made the best hatch on Plymouth Rock eggs. For the second test, I reversed the machines; that is, I took the one that had been run on the higher temperature and ran it on the lower temperature, made this reverse with both sets of incubators.

The results came out as before. The higher temperature made the best hatch on Plymouth Rock eggs, while the lower temperature made the best hatch on Leghorn eggs. With the Plymouth Rock eggs there was only a small per cent. in favor of the higher temperature. The third trial emphasized the results. This is the first time I have ever spoken of these particular experiments.

I made the experiments to test an idea formed while watching incubator results on different kinds of eggs and through studying the nature of the sitting and non-sitting varieties of poultry. I am thoroughly convinced that there is fully one degree difference between the right temperature for Leghorn eggs and the right temperature for Plymouth Rock or Brahma eggs. My conviction is that that two degrees difference between Leghorn eggs and Brahma eggs is about correct.

It is the experience of all incubator operators that Leghorn eggs hatch a day earlier than Plymouth Rock eggs in the same incubator. The same thing invariably happens in a hen's nest, yet a Leghorn that will set on her own eggs will hatch in 21 days, and the same of the Plymouth Rock.

On the first thought, the difference in temperature seems queer, but if we extend the thinking and reasoning, it is not so queer, after all.

It is a fever that makes hens broody. The larger varieties are more inclined to broodiness, the fever is higher.

With the large body, the heat is greater in proportion to the feathers. It is a hard matter to find opportunities to take the temperature under a setting Leghorn. Only once have I ever been able to do so on account of the wilder nature and the sensitiveness in having things other than eggs under her, but in the one good test the temperature showed 102 on the eighth day.

On the other hand, I have known the temperature to show as high as 106 on the twelfth day under a Plymouth Rock hen. In dozens of tests the thermometer has shown 104 after a week's incubation under the larger varieties. Let me further say that as a general rule the best results are obtained with incubators with a degree higher temperature in a cold room than in a warm room. This difference is due to the bottom of the machine being cooler in a cold doom. —Farm and Ranch.

RHODE ISLAND REDS

What breed of chickens are the best winter egg-machines? Eggs are what poultry people want when they are scarce and high priced.

The question has perplexed me no little. Two or three years ago I began to look about in order to find the most practical breed to adopt, having learned from experience that eggs for market was our greatest source of revenue, and paid us best of anything we sold, especially winter-laid eggs.

I began with the pure-bred light Brahmas. I thought they were good winter layers and after losing their usefulness as layers would make an ideal market fowl. They did not. I soon found they would not serve my purpose well, so I brought in a flock of brown Leghorns. They did better, but both breeds layed more eggs in summer than in winter.

Then I went for a pen of Barred Plymouth Rocks. They did reasonably well, but I was not satisfied with them entirely, so one year ago I bought six Rhode Island Red hens and one cockerel. Two hens did not do well—took cold in shipping.

From the four other hens I raised 125 as nice fowls as you would want to see. They grew faster and matured earlier than the Plymouth Rocks, all receiving the same treatment. They began laying earlier and are still away ahead in number of eggs. Twenty-eight Reds are now laying more eggs each day than seventy Plymouth Rocks, all treated and fed alike and being the same age.

This fact has settled me on this breed, and the present year I expect to raise enough Reds to keep them exclusively.

Every pullet that proves to be an early and good layer I will reserve for breeding, and by this method of selecting the best layers for breeding and mating them to cockerels from heavy layers, I expect to build up a family of layers that will give me a profitable number of winter eggs.

I will be careful to select birds for breeding that are vigorous and that conform as much as possible to standard requirements. I believe that the selection of the male bird that heads the pen is of as much importance as the selection of the females. I have two pens of nice selected birds to breed from this season.—R. C. C., Missouri.

Lamp-chimneys with my name on them live to a ripe old age unless an unusual accident happens to them. They never break from heat.

They give the best light, too, because they fit and are made of tough glass, clear as crystal.

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Irrigation and Pumping

THE UNIRRIGATED STRIP.

HOW to wet all the soil of an old orchard by irrigation, is a problem that confronts citrus fruit growers, especially when the summer sun asserts his power.

The good results that come from thorough wetting are shown this season of 1907 by the rampant growth and abundant blossoming of the trees.

The rainfall of two seasons previous was good and awoke the dormancy of that part of the root system scarcely reached by the usual methods of irrigation, the part of more or less width that lies along the tree row.

The copious and frequent rains of the present season have caused the awakened rootlets to put forth their energies in gathering plant food material in unusual abundance. What may be the result in fruit cannot, of course, be foretold; but the beginnings are auspicious, and we may be called on to dispose of a crop too large for the best results to the grower.

How we of the arid regions do boast of the great advantages of irrigation, and of our skill in the art of applying water; but we have to acknowledge, sometimes, that the hand of Nature has greater skill than ours in the distribution of the life-giving element. With all her demonstrations for our enlightment, no artifice of ours can approach her method in thoroughness, The water that comes from the skies, unburdened with earthly matter, has power of penetration and solution that stream waters, filled with the salts of the soil, cannot have.

What man has done and can do with running water is indeed wonderful; such vigorous growth and marvelous blooming, resulting from Nature's application of water from above us, should set us to studying to improve our method of flowing water along the surface.

Flooding probably comes the nearest to rainfall in wetting all the ground; but the objections lie against it of compacting the soil, of requiring too large a volume of water and too much labor, and of injury to trunks of trees by contact.

The furrow method so universally employed, seems to me the method to be improved.

The plan of making with one horse, by a tool called the grape hoe," the first furrows next to the trees has advantages; by means of the single guide wheel, operating like the rudder of a boat, the share of the tool will make an incurving furrow between the trees in the row, as the horse passes along in a direct line; such furrows, made on each side, afford a passage for water which partially irrigates the space, sometimes twelve feet wide, in rows of old trees.

Long continued irrigation in ordinary furrows induces a spread of the water to a considerable extent, both on the surface and beneath it, but the dry strip of the tree line is rarely penetrated by the flow on either side in ordinary furrows, for the usual period. Hand work in ponding between the trees in the row, or a horse tool to effect the same result would be a good practice.

Those whose lands are so situated that they can irrigate in two ways at right angles to each other, in alternate periods, have a great advantage.

The plan of running a subsoiler across the usual line of irrigation opens a passage or seepage; this is not, however, generally used.

We may always have recourse to frequent and deep cultivation to retain what it is difficult to supply.

In the youth of the trees, roots were developed by furrow irrigation near the trunk and these roots have reached out to receive water from more distant furrows, but, as the spread of the tree tops has increased, a considerable width of soil space is not drawn upon in the time of greatest growth, and good rains have to be relied upon largely to make this space give up its wealth of nourishment.

In this condition is found room for further development of the art of irrigation.—Chas. R. Paine.

DIVERSION FROM STREAMS.

Diversion from perennial streams is the most common method of securing irrigation water, and it is available for either great or small undertakings wherever unappropriated water flows in sufficient amount. In the regions where irrigation is most widely practiced there may no longer be such supplies available, but in the newer parts of the humid regions, farms are so situated that stream water can be readily secured.

After assuring himself in the manner described that a near-by stream carries sufficient water for his purpose, the next step for the farmer is to determine whether the water can be brought to his land at a reasonable expense. This will depend principally upon the length of the ditch which must be constructed.

The simplest way to find out how long the ditch must be is to run a line having the necessary grade from the highest point of the land to be irrigated upstream till it strikes the stream. The grade on which the ditch should be built, and consequently upon which this preliminary line should be run, will depend upon the quantity of water to be carried and the nature of the soil over which the ditch will run. In general, the larger the ditch and the lighter the soil the smaller the fall which can be given to the ditch; and the shorter the ditch the smaller the fall. However, the grade should not be too light, for the ditch may have to be made larger to carry the desired supply of water. On the other hand, the grade cannot be very heavy or the strong current will wear away the ditch banks. Therefore the range of the grades which may be given to a ditch is limited. In ordinary soils a grade of 2 inches in 100 feet may be given to small ditches, and in clay soils as much as 3 to 5 inches in 100 feet may be given.

Should the line run in this way be too long, the stream below the point where the line strikes it should be examined to see if there is any place where the water can be raised by a dam high enough to flow into the proposed ditch. In case no such place is found, a water supply from that source must be abandoned. If this preliminary line shows that the water can be brought to the land by a reasonable expenditure of labor and money, the ditch line should be carefully located.

It may be that the place where the line strikes the stream is not a convenient place for diverting water. In such a case the head of the ditch may be moved upstream, and a drop put in to avoid too heavy grades, or the head may be moved downstream and the water raised to the ditch by a dam.

FUNGUS ON BLACKBERRIES.

Very many of the blackberry and raspberry vines of the upper country are suffering from a severe attack of fungus disease known as Anthracnose. As the berry industry in many sections is a very important branch of fruit growing, a disease of this nature, when very prevalent, becomes a serious matter. Anthracnose is a fungus disease which makes its appearance early in the spring and is indicated by small reddish-purple spots on the canes and leaves, these spots merge into each other until whole patches are involved, and the disease girdles and kills the canes. Like all other fungus troubles, it is at its worst in the early spring when the moist conditions of the atmosphere and the tender condition of the host plants are especially favorable for its growth and spread. The best remedy for the disease is the removal of the old canes, which should be burned, and the application of a diluted Bordeaux, say bluestone, two pounds; lime, two pounds and thirty gallons of water. Of course, after pruning, all the wood cut out should be burned.

One of the old landmarks of Placerville, a venerable walnut tree, was blown down during the late storm. The tree measured 9 feet 4 inches in circumference, while two of its branches had each attained 24 inches in circumference.

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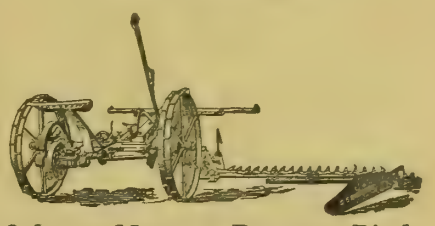

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Including Wm. M. Humphrey's Entire Flock of Prize Winners. Birds in my yards won at Los Angeles, 1907, the largest show ever held in the West,

23 Out of a Possible 25 Prizes

Also at San Diego, Portland, Cincinnati, San Francisco, Fresno, Oakland, Hanford and other points, under as many different judges.

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Will sell Singles, Pairs, Trios or Pens.

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$2.50 for 15, $10.00 for 100

From special matings containing my very best prize-winners, $10 per 15. Correspondence carefully answered. Visitors welcome.

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Monrovia, Cal.

Get off at Mayflower, walk north two blocks, thence west two blocks to ranch.

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New, fresh stock at the lowest prices. Come and see us or send in your orders.

Before buying you should see the

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Capacity 100 eggs, $10 delivered. Hot water, copper boiler, nursery, Best Sheer Regulator; everything the best. No mahogany, no frills, no furbelows. Also,

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Imported and Domestic Matings Now Ready. Surplus Stock All Sold. Let us book your order at once for future delivery. **L. L. Viereck, Pres.** Ancona Club of America, **Albany, Oregon.**

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

Probably Indigestion.

I have taken the Cultivator for 3 or 4 years, could not do without it, and now I want to ask you to please tell me what to do for my little turkeys; some of them are 3 weeks old and some a week old; they eat all right for a few days, then in the morning their wings drop down and they won't eat and their eyes shut as they are walking round. The droppings are all right now; I can't find any lice on them any place. If you can tell what to do I will be very glad; the eggs are hatched by turkey hen; she still has them; they have onions, green barley, curd, chick food and clear water.—Mrs. W. F. R., Chino.

I am sorry about your little turkeys. It is either indigestion or they are taking cold. I think it is really the chick feed. There is cracked corn in the chick feed and that is very bad for little turkeys. In one of Mrs. Chas. Jones articles on feeding young turkeys she says, "the least little bit of corn makes them sick and they die."

Over and over again I have warned our readers not to give the little turkeys any corn at all until they have "sported the red." This is not until their heads and neck become red like adult turkeys. Still people will persist in feeding chick feed, or cracked corn or corn meal, and invariably have trouble. If they must have grain give them cracked wheat or rolled breakfast oats, these do not turn sour or ferment in their stomachs, but corn does. Possibly yours may be taking cold from sleeping in a draught or from running in damp grass early in the morning, but I think it is the corn in the chick feed.—Mrs. A. B.

Little Turkeys.

In one of your articles you say: "Do not give the little turekys corn of any kind until they have sported the red?" What do you mean by that, and how can I know when that time arrives?—A. B. C., Downey.

When turkeys get to be about three months old the down on their heads and necks is replaced by corrugations of flesh (comb and wattles); these as they grow older become red and it is called "sporting the red." When they have become red they are matured enough to be able to eat corn without it injuring them; if they eat it too early it always ferments inside them and that is one of the worst things that can happen to either chickens or turkeys. The digestive organs of chickens are hardier than those of turkeys and they can stand more abuse. In the wild state little turkeys live only on insects and tender greens, they have to wait till fall for the seeds and grains, and by following nature in this you will raise every turkey.

Of course you cannot dig worms, grubs, and hunt grasshoppers enough to feed your turkeys; you must replace these with curd, hard boiled eggs etc., onions chopped finely and tender greens. Give them range and let them sleep in an open shed so they will have plenty of fresh air.—Mrs. A. B.

Inoculation.

After planting inoculated garden peas will it be necessary to inoculate clover or beans or does the same inoculation do for all plants?—C. D., San Bernardino.

If you want immediate effect, you had better inoculate when you change the variety of legume. It is known that the bacteria will either adapt itself to entirely new varieties or something else happens. It, however, takes time with most new varieties.—J. W. M.

Lippia for Tennis Courts.

A subscriber is anxious to know how much of a success Lippia repens is on tennis or other courts and would like to hear from those who have put the plant to such use. Will somebody enlighten us?

Toulouse Geese.

Can you inform me as to where I can get Toulouse geese eggs, and the price? Thanking you for the information.—Mrs. F. G. F.

Consult our advertising list.

FISH AND GAME LAWS.

At the recent session of the legislature a new law was passed placing a license upon the pastime of hunting. The law has received the approval of the Governor and goes into effect July 1st. After that date one who desires to sally out in pursuit of wild birds and game during the open season must procure a license.

The gist of the new game and fish laws of the state is given as follows:

Hunting license—For resident citizens, $1; for non-resident citizens, $10; for aliens, $25.

Open Season for Game.

Duck, October 1st to February 15th.
Quail, October 15th to February 15th.
Snipe, October 15th to April 1st.
Mountain quail, September 1st to February 15th.
Grouse and sage hen closed for two years.
Doves July 15th to October 15th.
Tree squirrel, September 1st to January 1st.
Deer, July 15th to October 1st.
Trout, May 1st to November 15th.
Golden trout closed for two years.
Black bass, June 1st to January 1st.
Salmon, in tide water, October 23d to September 17th.

Bag Limits.

Ducks, 35.
Quail, dove, curlew, ibis, plover, rail, 25.
Trout 50 pounds or 25 fish, none less than 5 inches in length.
Black bass, 50.
Tree squirrel, 12 in one season.
Deer, 2 in one season.

LITTLE BROWN MEN.

"Fruit growers of Sutter county have found it necessary to organize to protect themselves against the exactions of Japanese laborers. The Japs having driven out the whites from that section, have become so dictatorial that the fruit growers have been placed almost at their mercy and have been compelled to organize for protection."—Oakland Enquirer.

"A big crop is almost certain this year—bigger than for several years. Everybody knows there is not anywhere near help enough in sight to harvest it, and the Japs are getting so independent that they hardly want to work for a white man. What are we going to do about it?"—Winter Express.

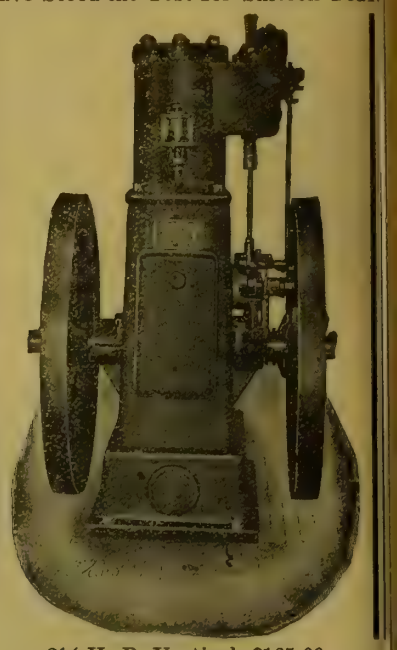
Is this not characteristic of the Japanese? And is it not worth considering by all who look beyond the immediate present?—Lindsay Gazette.

It certainly is. The editor of the Sun had ample chance to witness the results of Jap labor in the beet fields at Oxnard, where they have gradually crept in until today they practically control the labor market, and a more tyrannical and exacting set of people never lived. Beside this, they have been found so tricky and unreliable that in doing business with them farmers and merchants are forced to watch them continually.—Exeter Sun.

"Gross ignorance is 144 times as bad as just ordinary ignorance."

Columbus Engines

Have Stood the Test for Sixteen Years



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This is a photo of 201 killed in one day on a ten acre field before they could get back to their holes, with one bottle of

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Endorsed by Agricultural Colleges and Experiment Stations. Not one of the ordinary poisons, but in a class by itself. Has had greatest success in the Middle West. The secret being that it is most attractive to gophers, squirrels etc., and sure death to them. It gives the grain a glossy coating, retaining the poison for weeks. Hundreds also die in their holes by eating it there. We have bought the patent rights for this section and are selling at the eastern price of $1.25 for large bottle. The ingredients cannot be bought at a drug store for that price. Money refunded if not as represented—so printed on the bottle. If your dealer does not keep it send $2.50 for two bottles, express prepaid by us.

We do not send less than 2 bottles.
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OIDIUM OR POWDERY MILDEW

Continued from First Page

Summer Form of the Fungus.

The mycelial threads of the Uncinula spiralis are extremely fine—not over two ten-thousandths of an inch in diameter. They elongate and grow over the surface to which they are attached by their haustoria and at intervals send out upright branches—hyphae—thirty to forty ten thousandths of an inch long.

These hyphae are somewhat thicker than the mycelial threads, gradually increasing in diameter from the bottom to the top until they become two or three times as thick as the threads from which they arise. Cross partitions divide the hyphae into several cells, the uppermost of which finally becomes detached and forms a conidium or summer spore. The hyphae continues to grow and the second cell develops into another conidium. This process continues as long as the conditions are favorable throughout the summer, each hypha producing a large number of conidia. These conidia are egg-shaped and measure about 5x12 ten-thousandths of an inch.

When a conidium falls on a suitable part of the vine it sends out a germinating tube which fixes itself by haustoria and grows into a new mycelium which in turn produces more summer spores.

In this way, all the green parts of a whole vine may finally be covered with a coating of mycellium, hyphae and conidia, which together form the whitish or grayish matter we know as "Mildew" or Oidium.

Winter or Resting Forms.

In the autumn another form of the fungus is often produced. Among the felted threads of the mycelium may be seen with the unaided eye numerous round black bodies, which are perithecia, or receptacles containing the spores. These bodies have an average diameter of about 1-250 of an inch, which is about one-third the diameter of the dot of an i in the print of this bulletin.

Under the microscope they are seen to vary in color from yellow when unripe to nearly black when mature.

A mature perithecium consists of a nearly spherical case containing from four to eight cell-sacks called asci. The walls of this case are strong and resistant to cold and other unfavorable conditions which destroy the summer forms of the fungus. They are made up of thick polygonal cells and form a very efficient protection to the asci. An ascus contains from four to six spores.

Each perithecium is furnished with 10 to 25 hair-like appendages of about the same thickness as the mycelial threads and from one one-hundredths to one-fiftieth of an inch in length. These appendages are divided by several cross partitions and are coiled at the free end. They consist usually of a single thread, but occasionally branch.

How it Sticks.

The perithecia remain upon the canes and leaves or in the soil until the return of warm weather in spring. As soon as the temperature becomes sufficiently high, the walls of the perithecia break open and allow the asci to emit their spores. These spores, when they reach a leaf or growing shoot, germinate in the same manner as the summer spores and give rise to a new generation of Oidium.

The perithecia do not all emit their spores at the same time owing to the different conditions of the places in which they have passed the winter. Some may even remain in the soil until the following spring. Perithecia have been shown to contain spores capable of germination eighteen months after their formation. It is therefore impossible to completely exterminate the fungus in a vineyard in one year, however thorough the treatment. Burying the perithecia by plowing-in simply aids in their preservation and they are ready to cause a new infection two years later when brought to the surface again by later plowing. Although the Oidium was introduced into Europe as early as 1845, it was not until 1892 that the winter form of the fungus was found there. It was for this reason uncertain until that time that our Oidium and that of Europe were identical.

It seems probable that the fungus, under some conditions, can pass the winter in the conidial or summer form. At all events, in certain districts the perithecia have never been found and are therefore absent or very rare. They are very rare in the interior valleys of California. On the other hand, they are produced in immense numbers on vines within the influence of the summer ocean fogs. At Berkeley it is common to find thousands of them on every leaf and cane of a vine. More than 100,000 perithecia have been counted on the upper surface of a single leaf, and as each perithecium contains fifty or more spores, the number produced on a single vine may be hundreds of millions.

In Europe they are formed in September and October. In Berkeley they are found in abundance as early as the middle of June. Their formation seems to depend on weather conditions. If after a period of warm, moist weather, which has produced an abundant growth of mycelium, the temperature suddenly falls to near the lowest limit for the growth of the fungus (50 degrees F.), they are produced rapidly and in great numbers. These are weather conditions which often occur at Berkeley and in the valleys nearest the coast.

In the interior very different conditions exist. The fungus may grow abundantly during the spring and early summer, but there is seldom any fall of temperature at this season sufficient to cause the production of the winter spores. As the summer advances, the air becomes too hot and dry for the fungus, so that by the time the cooler weather of October arrives, most of the Oidium has disappeared and the abundant growth of strong mycelium which is necessary does not exist.

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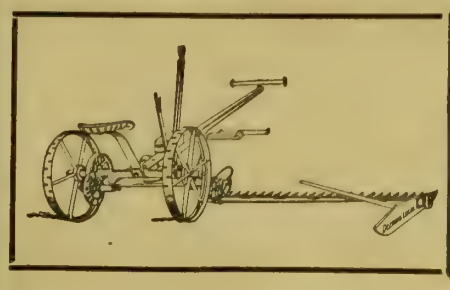
"Hab yo' got any medicine dat will purify de blood?"

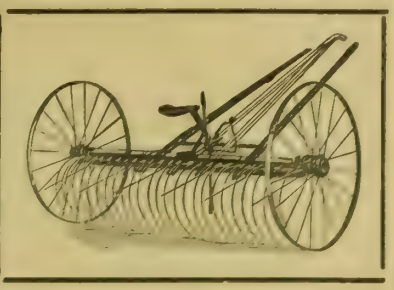
"Yes; we keep this sarsaparilla at one dollar a bottle. It purifies the blood and clears the complexion."

"Well, boss, hasn't yo' got suffin' fo' about fifty cents, jess fo' de blood? I don't keer about de complexion."

"'Tis true," said he, "I need a bill collector,
But I'm sorry that you cannot be the one."
He said it really pained him to reject her,
But then, "a woman's work is never dun."

The farmer's mint—the dairy cow.





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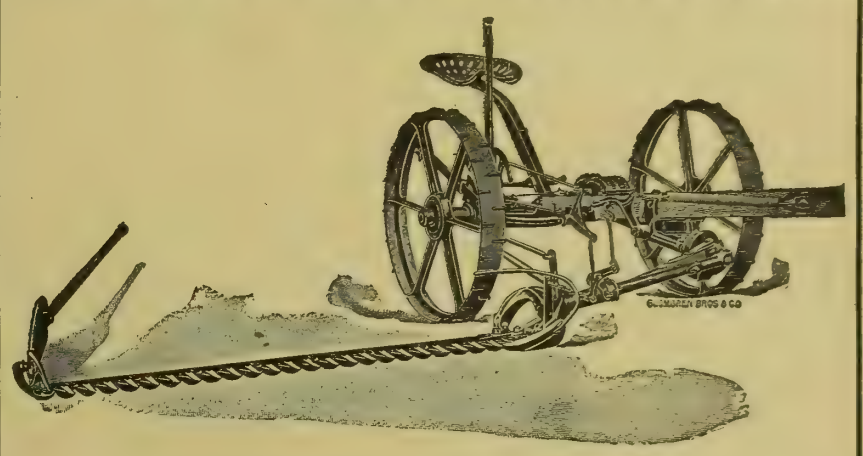

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SQUIRREL AND GOPHER POISON
Accept No Substitute

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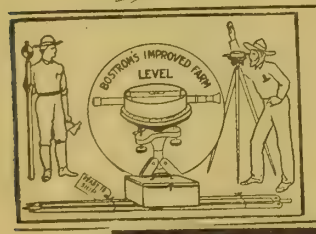

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SALT LAKE ROUTE

Household Department

THE BRAVEST BATTLE.

The bravest battle that ever was fought,
Shall I tell where and when?
On the maps of the world you will find it not;
'Twas fought by the mothers of men.

No marshalling troops, no bivouac song,
No banner to gleam and wave;
But, oh, these battles, they last so long.
From babyhood to the grave.

Yet faithful still as a bridge of stars
She fights in her walled-up town—
Fights on and in the endless wars,
Then silent, unseen—goes down

Oh, ye with banners and battle shot,
And soldiers to shout and praise,
I tell you the kingliest victories fought
Were fought in these silent ways.

O, spotless woman in a world of shame!
...th a splendid and silent scorn,
Go back to God as white as you came
The kingliest warrior born!

IMPROVEMENT OF HUSBANDS.

THERE are almost as many kinds of husbands as there are marriages. The good class needs no public praise. The opposite is made up of many kinds. There is the wife beater, for example.

Last month we met three women who bore stricking evidences, if we may use the term, of being married to a member of this species. One had two deep sores in her head, another had a dislocated wrist, while the face of the third was disfigured by black and blue spots of no mean dimensions. The latter explained that her peculiar coloring was due to the fact that she had refused to go out at eleven o'clock at night to purchase cigarettes for her lord and master.

In these instances, as well as where the husband drinks, uses abusive language, or neglects to provide properly for his family, the wife can seek redress at the hands of the law, and hundreds of these brutal life-partners have been cowed into a most pathetic submission when brought before tribunals of justice.

But what of the woman who suffers from a refined cruelty that no law in the land can remedy—not even the divorce court?

What of the man who deliberately tries to humiliate his wife before company? Not long ago we were one of three guests at a dinner party given by an old school mate. The hostess was a dainty little woman whose manners were irreproachable. The husband was known as a good sort. He had an excellent position and belonged to one of the best families in town. Yet, from the soup to the coffee, he lost no opportunity to embarrass and mortify his wife.

Instead of crackers the hostess had toasted bread sticks with the soup. These were greeted by the following remark: "Why don't you stick to crackers? Suppose you think this dry bread is more fashionable." The hostess smiled condoningly, and rang the bell for crackers. Then when the maid brought in the most appetizing roast, and set it before the master of the house, and instead of carving, he exclaimed angrily: "Why didn't you have this cut up in the kitchen as you usually do? You know I hate to carve." With this he jabbed his knife into the roast, cutting it down through the center and served it in chunks.

The little wife swallowed hard to keep back the tears, while the guests felt like leaving the table. However, the end was not yet. When the salad, which looked fit for a king, was brought in, the host brutally asked why she served such "mixed up messes." As far as he was concerned, he preferred substantial food, and without waiting for the maid, he got up and took his own plate to the kitchen, bringing it back with a generous helping of meat and potatoes. While he was absent the wife made a brave attempt to look unconcerned and take the matter as a joke, but met with little success.

At the close of the meal, we all felt like taking our host out in the backyard and thrashing him individually and collectively. However, we were his guests and could not show our disapproval; as for the wife we learned afterwards that she collapsed completely after our departure. She cried for hours, declaring that never again would she try to entertain when her husband was at home.

The casual observer may see traces of comedy in these incidents, but they are real tragedies to the wives concerned.

The modern Othello who shows signs of jealousy because his wife happens to glance at a full moon, or shake hands with the minister, or ask the hired man if the chores are done, is another genus that makes the marriage tie irksome at times.

And what of the man who holds the purse strings so tight that the wife had rather go in rags than ask her lord and master for financial assistance? He never actually neglects his family. He is too clever for that. But can one imagine a more humiliating ordeal for an independent woman than that of humbly begging her husband for every cent she uses for herself or the children, and to be compelled to account in detail to the bread-winner just how these nickels and dimes are spent?—Mrs. H. L. Farmer.

SAVING IN MILLINERY.

The girl who understands how to clean up and refashion her hats, often appears as well dressed as those who spend a lot of money on their millinery, and any good straw hat can be brought up-to-date by changing the color or by altering the shape or style of trimming. It is easy to lower a high crown by removing several rows of braid, or to give height to a low one by adding several rows, and the brims can be made any desired width by adding rows of fancy braid. A white straw hat that is only slightly soiled may be cleaned by rubbing with moist corn meal, and if very much soiled it may be cleaned beautifully by brushing with a paste made of lemon juice and flowers of sulphur. Apply vigorously to the hat with a small brush, and let the paste remain on the straw until it has become thoroughly dry, then brush it off with a clean, dry brush. If you are tired of the white hat, you can dip it in a strong solution of diamond dye for cotton of the shade wanted, and press it into the desired shape while the straw is still wet, and a faded straw hat can be made the color it was when new by dissolving some of the same dye for wool in alcohol and applying to the hat with a soft brush, and when perfectly dry it must be given a coat of thin varnish. Boy's hats may be brightened in the same way and will only need a new band and lining to make them as good as new. If you have roses or other artificial flowers that can be used again, the addition of new leaves which can be purchased for a trifle will give the flowers a fresher appearance, and by using old straw shapes and trimming, it is possible sometimes to have a stylish and becoming hat without any present outlay of money.—A. M. H.

CLEANING GLASS.

A small paint brush with long, strong, supple bristles is the best thing with which to keep cut glass free of dust. It is the only means of reaching the dust which only lodges in the small carvings. To wash cut glass use borax in the water, and the result will be a sparkling, shining receptacle that will glisten as brilliantly as it did when new. If a cruet bottle has become stained with vinegar sediment, or a vase with sediment from flowers, or any other piece of glass which it is hard to reach into to wash, chop up a raw potato (peeled) and put it into the bottle with sufficient water or suds to just cover the potato; leave it for several hours, giving an occasional shaking; empty and rinse well; if necessary, repeat. Results will be pleasing.

CHARGE OF THE MAD BRIGADE.

(With acknowledgements to Tennyson)
Half a block, half a block,
Half a block onward,
Packed into trolley cars
Rode the six hundred.
Maidens and matrons hale,
Tall spinisters, slim and pale,
On to the Bargain Sale,
Rode the six hundred.

Autos to right of them,
Hansoms to left of them,
Flying trains over them,
Rattled and thundered.
Forward, through all the roar,
On, through the crowd they bore,
To Price and Sellers' store
Rode the six hundred.

When at that mart of trade,
Stern-faced and unafraid,
Oh, the wild charge they made!
All the clerks wondered.
Their's not to make reply,
Their's not to reason why.
Their's but to pacify
All the six hundred.

On bargains still intent,
Homeward the buyers went,
With cash and patience spent,
And friendships sundered.
What tho' their gowns show rents—
They have saved thirty cents;
Noble six hundred!
—Louise Stevens in the Woman's Home Companion.

THE SPOILER.

A woman there was and she wrote for the press
(As you or I might do),
She told how to cut and fit a dress,
And how to stew many a savory mess,
But she never had done it herself, I guess—
(Which none of her readers knew).

Oh, the hour we spent and the flour we spent,
And the sugar we wasted like sand,
At the hest of a woman who never had cooked
And now we know that she never could cook)
And did not understand.

A woman there was and she wrote right fair
(As you or I might do),
How out of a barrel to make a chair,
To be covered with chintz and stuffed with hair,
Twould adorn any parlor and give it an air!
(And we thought the tale was true).

Oh, the days we worked and the ways we worked
To hammer and saw and hack,
In making a chair in which no one could sit,
A chair in which no one could possibly sit
Without a crick in his back.

A woman there was and she had her fun
(Better than you or I);
She wrote recipes and she never tried one.
She wrote about children—of course, she had none;
She told us to do what she never had done
(And never intended to try).

And it isn't to toil and it isn't to spoil
That brims the cup of disgrace;
It's to follow a woman who didn't know beans
(A woman who never had cooked any beans),
But wrote and was paid to fill space.
—The Congregationalist.

SEMITROPIC FRUITS FOR HOME GARDEN.

Fruits for the home garden is always an attractive subject, because it comes so close to home. All of us know of some good varieties of fruits that thrive in the temperate zones, but when it comes to selecting the tropical and semitropical fruits, it is quite new to most of us.

The commercial varieties of fruits of this class are quite common to all of us. There are, however, many choice varieties that are not common and are desirable for the garden.

In addition to the Washington navel and Valencia orange, St. Michael and King are very desirable. They both come late and in localities where Valencia loses its fine quality in midsummer as it does in the interior, these varieties are very delicious.

King takes the place of Tangerines that come early in the season. It is of fine quality, but should not be planted in places exposed to severe north winds as it is very sensitive to them.

Villa Franca lemon is perhaps the best for the garden situated in the interior; for coast regions, Lisbon is considered the best.

The Pomelo is a popular fruit and should be in every home orchard. Marsh's Seedless is a choice variety, being practically seedless and consequently easy to prepare for the table. There are a number of varieties of Pomelos on the market, and they are all good as far as flavor is concerned. There is very little difference in this respect. The average Pomelo has from twenty to sixty seeds, and they occupy considerable space. Those of large size and few seeds soon impress us with their superiority, and it is well to bear this in mind when planting.

The Advance loquat is a desirable fruit and is useful in many ways. Other varieties of loquats are also desirable. Some of the smaller varieties are, to our mind, the best flavored, though there is very little edible substance to them.

The pomegranite is one of our most delicious fruits and is almost wholly free from the attacks of insects and disease.

Next to the orange, the fig is perhaps the most popular semitropic fruit in California. There are numerous varieties that are adapted to various sections of the country and only trial can determine which is best for any particular section. For a black fig, the old Mission is excellent. For regions near the coast, few figs will mature properly. Where the climate is right, Calimyrna is by far the superior of any other variety. This, however, cannot be successfully grown without the Capri fig.

The olive comes in for a place in the home garden, and where the climatic conditions are right it is exceedingly ornamental, especially when large.

The variety that gives the best satisfaction for general use is Mission. There are several types of this olive, the large one being the best. It sells on the market where it is grown when other varieties are a drug. It makes a good pickle, and good oil. It is perhaps not as desirable in cold locations as Columella or Santa Catarina, which ripen early, thus being out of the way before severe freezes come.

The largest olive is Sevaliano and Ascolano is next. They are used for pickling green, making the Queen olive that is imported.

While olives, and the Mission in particular, will bear good crops alone, still it is known that two varieties planted together give best results. Santa Catarina and Mission are well adapted for such planting. The characteristics of the Mission are the best determined in California because it is more widely planted.

PROFESSIONAL ADVICE.

"It wouldn't do yer a bit of good, jedge, for me to 'splain how I cotched dem chickens, for yer couldn't do it yerself if yer tried it forty times, and yer might get yer hide full of buckshot. De best way for yer to do, jedge, is for yer to buy yer chickens in de market like udder folks do, and w'en yer wants ter commit any rascality, do it on de Bench, whar yer am at home!"

The Junior Monarch Hay Press Co. of San Leandro are advertising their Junior Monarch Hay Press and Little Giant Hay press in the Cultivator at the present time. Those who have used this firm's production are loud in praises of the same, and those who may want anything in the line of goods put out by this firm, can rely upon receiving a first-class press. Over 16,000 of these presses are now in use. So far, the claim is made that never a one has been returned. Send for their catalogue No. 21, and see what some of their many customers say of their goods. Their office and factory is at San Leandro, Alameda Co., California.

George F. Wilder, a prominent poultry dealer of Petaluma, is about to establish an extensive chicken ranch on the Holburn tract, between San Jose and Campbell.

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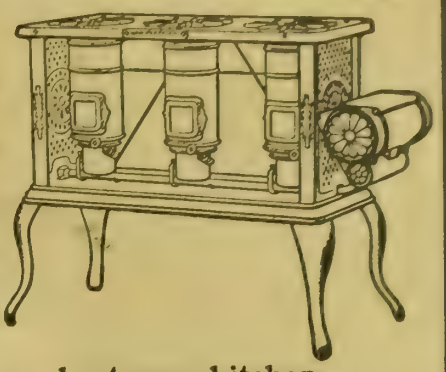

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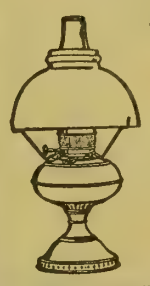

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FOR SALE—4000 VALENCIA AND 1000 W. Navels; one year buds on three year roots, clean and vigorous; buds taken from bearing trees. F. E. CHAPMAN, R. F. D. Box 84, So. Craig Ave., Pasadena, Cal.

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MISCELLANEOUS.

FOR SALE—A FEW GALLONS OF SEEDling Orange Seed, fresh and clean, $2.50 per gallon. L. Z. HUNTINGTON, Anaheim, Cal. Home phone, 1663.

FOR SALE—POTS, 2IN. ONLY, AT $2.50 per 1000, net. Try sample 1000. Also loose glass (washed), ventilator sash, hot-bed sash, half-tone cuts, etc., etc. CHAS. HOWARD, 2121 Park Ave., Riverside, California.

See Us for Sanitary Milk Bottles. O. J. Weber Co., 555-557 So. Los Angeles St. Los Angeles.

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THE FARMER.

The farmer has the most sane and natural occupation and ought to find life sweeter, if less highly seasoned, than any other. He alone, strictly speaking, has a home. How can a man thrive and take root without land? He writes his history upon his field. How many ties, how many resources, he has—his friendship with his cattle, his team, his dog, his trees, the satisfaction in his growing crops, in his improved fields; his intimacy with nature, with bird and beast, and with the quickening elemental forces; his cooperation with the cloud, the sun, the seasons, heat, wind, rain, frost; nothing will take the various distempers which the city and artificial life breed out of a man like farming, like direct and loving contact with the soil. It draws out the poison. It humbles him, teaches him patience and reverence, and restores the proper tone of his system.

Blessed is he whose youth was passed upon a farm. Cling to the farm, make much of it, put yourself into it, bestow your heart and your brain upon it, so that it shall savor of you and radiate your virtue after your day's work is done.—Oakley Eagle.

The Produce Markets

Los Angeles Markets

LOS ANGELES, April 24, 1907.

Butter.

Butter arrivals totaled nearly 60,000 pounds yesterday most of which came by steamer from the north. About half this amount went directly into cold storage and will in no way affect the official selling price.

Valley Creamery	47½
Coast fy,	40
Cooking	20

Cheese

The receipts of cheese yesterday, both local, northern and eastern, was unusually heavy. No price changes were recorded as a result of the big receipts, though it may tend to weaken the market tomorrow.

Cal. Young American, per lb.	21
California Anchor	20
Cal 3-lb. hand	21
Northern, fresh	19
Domestic Swiss	22
Imported Swiss	30

Eggs and Poultry

Eggs continue steady at unchanged prices. Receipts yesterday amounted to more than the estimated amount needed to meet consumption, but this is an exception to the average arrivals for several days past and the market has been firm.

Eggs local, per doz	21
Northern Candled	19
Fresh Eastern	18

The following are average prices which dealers pay to producers for live weight:

Hens, per lb.	16
Young Roosters, per lb	18
Fryers	22
Broilers, per lb.	24
Old Roosters	8
Turkeys	17
Geese	15@16
Ducks	15@16

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lbs.	7.75@8.00
Prime Steers.	5.50
Heifers	4½
Calves per lb.	5
Sheep, ewes, per head	5.00@5.25
Lambs per head	6.50
Wethers	5.50

Potatoes

The price of eastern potatoes weakened materially again today, several cars of Wisconsins selling wholesale at $1.50 per hundred. A few days ago Wisconsins sold at this figure, but since that time there have been none offered lower than $1.60 to $1.70, but at these figures there was little demand and none sold. The offerings this morning were readily accepted and dealers bought freely. This puts the selling price to the retail trade at about $1.70@1.80 per hundred.

Sweets, Yellow, per sack	5.00
Sweet, White per sack	4.75
Colorado	2.05
Minnesota	2.00
Early Rose, Northern	2.50
Early Rose, Eastern,	2.25
Oregon,	2.25

Vegetables

Green vegetables are not very abundant as was the case during the greater part of last week, and prices are generally a little higher as demand is still strong. Since the glut in bunch goods a few days ago, particularly turnips, the Japanese gardeners have been withholding from market this variety of vegetable for the purpose of forcing prices upward, which they have done successfully and hardly a bunch of turnips was obtainable at noon today at 35@40c a dozen bunches.

Asparagus, lb	10@14
Beets, per doz	40@60
Bell Peppers, Green, lb	5
Cabbage, sack	75@1.00
Chili Peppers, Green	30
Chili, Dried, per lb.	13½
Cucumbers, per doz.	75@1.50
Cauliflower, per crate	3.00
Carrots, per doz	35@40
Celery, per doz	30@50
Egg Plant, per lb	15
Garlic per lb	6
Green Onions, doz. bunches	25@30
Lettuce, per crate	40@75
New potatoes, per lb.	5@6
Lima Beans, per lb	7@8

Onion receipts were large today and prices declined on account of the increased supply. The bulk of these onions are now coming from Coachella. Prices to the retail trade went down about 10 cents per crate to $2.20.

Onions, Aust. Northern, sk	3.50
Nevada	3.20
Bermudas	2.20
Parsnips, per doz	35@50
Rhubarb, per lb.	3
Radishes, per doz	15@20
String Beans, per lb	8@12
Sugar peas, per lb	2@3
Tomatoes, Mexican crate	1.50@2.00
Turnips, doz. bunches	10@20
Wax Beans, per lb	16@18

Citrus Fruits

Lemons	2.00
Valencias	1.50@2.00
Navels	1.25@1.50
Grapefruit Seedless	2.00@2.50
Grapefruit seedlinggs	1.25@1.50

Fresh Fruits

Apples, Bellefluer, per box	1.50
Apples, Ben Davis	1.50

Dried Fruits

Evap. Apples, fancy, per lb	9
Apricots	18
Peaches.	12
Pears	12@13
Prunes, fy,	5@8

Beans, Dried

Limas, No. 1, per cwt	4.75
Pink No. 1	3.00
Lady Washington	3.00
Small White	3.50
Black Eyes	5.50@6.00
Garvanzas	5.50@6.00
Lentils	12@15

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb. cans,	
Light Amber	6½@
Comb, water white, 1-lb. fms	15@1
Light Amber	1

Nuts

Almonds per lb.	1
Peanuts, Virginia	
Peanuts California	6@
Walnuts, No. 1 S. S.	1

Hay

Barley, No. 1	14.50 @16.0
Barley, No 2	11.00@12.0
Alfalfa, Local, per ton	15.00@16.0
Plain Oat Hay, No. 1	17.00@19.0
Plain Oat Hay No. 2.	9.00@15.0
Wheat No. 1	14.00@16.0

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, new, per cwt...	1.5
Rolled Barley	1.3
Corn, per cwt	1.4
Cracked Corn	1.4
Feed Corn Meal	1.5
Shorts	1.3
Bran	1.3
Oil Cake Meal	2.5
Cocoanut Meal	1.

San Francisco Markets

SAN FRANCISCO, April 23, 1907.

The market was without any change whatever, either as to price or ton. Business was dull on the Street, and no sales were made on 'Change.

Butter.

One carload of oranges arrived, but the market was still largely supplied and weak. Strawberries went at about the preceeding day's price. The steamer Umatilla on Monday had for British Columbia 28,238 pounds of dried fruit, 11,050 pounds of raisins and 765 packages of fresh fruits.

California, ex per lb	22
California, firsts	
California seconds	
Packing Stock	

Cheese

New California, fancy	
Cal. Young American, fancy	16

Eggs and Poultry

Fresh Ranch Eggs	
Eggs, first, per doz.	18
Hens, per doz., small	5.00@5.5
Hens, large	600@7.
Young Roosters, large	7.00@9.
Young Roosters, small	4.50@5.
Old Roosters	4.00@4.
Fryers, per doz	6.50@7.
Broilers, per doz	4.00@6.
Ducks, young	6.00@8.
Geese; per pair	2.00@3.
Turkeys, per lb	16@

Live Stock

Steers. No. 1	9@9
No. 1 Cows and Heifers	6½@
Hogs, 80 to 130 lbs	8@8
Hogs, 250 to 350 lbs.	
Calves, per lb	5@5
Lambs, yearlings	6½@

Potatoes

Salinas Burbanks ctl	1.50@2.
Rivers	1.85@2.
Sweet Potatoes, ctl	2.75@3.
New Potatoes	4@

Vegetables

Asparagus	6@12
Cucumbers, per doz.	1 00@1.25
Chili Peppers, Green lb	15@25
Egg plant per box	3.00@3.50
Green Peas, per lb.	10@12
Squash, crates.	65@90
Onions, Red, per sack	75@1.00
Onions, Yellow	75@1.00
Onions, new per lb,	4
Peppers, Green Bell	25
Rhubarb, per box	75@1.25
Tomatoes, Mexican	1.50@2.00

Citrus Fruits

Lemons	75@2.00
Navels	1.25@2.75
Seedlings	1.50
Grapefruit, seedlings	1.00@1.50
Grapefruit, seedless	2.00@3.00
Limes	3.00

Fresh Fruits

Apples, per box	1.50@2.50

Dried Fruits

Apples (evap.)	6@8½
Apricots, per lb	16@20
Figs, white	4@5
Prunes	3@4½
Peaches	10@12½
Raisins, seeded (1906)	3½@10
Thompson, unbleached	7½
Thompson, bleached	9@11

Beans and Seeds

Limas, No. 1	4.15@4.25
Pink	2.40@2.60
Large White	2.50@2.75
Small White	2.95@3.05
Black Eyes	5.00@5.25
Red Kidneys	3.75
Mayo	2.70@2.85

Hops

Fancy, 12½c; choice, 12c; prime 10½@11c; common, 8@10c per lb.

Nuts

Almonds new	14@18
Peanuts, Viginia	6½
Peanuts, California	5½@6
Mixed Nuts	15@16

Honey

Clear White Comb	16½
Amber	14@15
Extracted	5½@7

Hay

Alfala, local	8.00@12.00
Oat	16.00@20.00
Wheat. No 1	23.00@26.00
Wheat, No 2	14.00@18.00

Grain

Wheat No 1	1.35@1.45
Barley No 1	1.20@1.23
Corn, small yellow	1.50
Corn, yellow	1.27@1.32
Oats, White	1.42@1.65
Oats, Red	1.30@1.50
Ground Barley, per ton	27.00@28.00
Bran per ton	22.00@23.00
Straw, per bale	45@75
Feed Corn Meal, per ton	31.00
Cracked Corn per ton	32.00
Oil Cake Meal, per ton	33.00
Cocoanut Cake, per ton	27.00
Alalfa Meal, per ton	21.00
Dealfalfa, per ton	21.00

Citrus Market

NEW YORK MARKET.

NEW YORK, April 23.—The market from 5c to 10c lower on sizes 64s to 96s. Other sizes are steady. It is raining. Thirty-two cars of oranges and one car of lemons sold.

NAVELS—	Average.
Orchard Thomp's Imp N O Co	$3.90
Standard Thomp's Imp N O Co	3.45
Independent fy Highland Dist	3.10
S. Keystone ch King Ft Co	3.20
S. Keystone st King Ft Co	2.85
Sunshine Grove J F Bowen	3.00
Sunrise Grove J F Bowen	2.95
Native Son ch A L King Ontario	2.60
Salt Lake st A L King Ontario	2.25
Vista Bonita fy Hemet Dist	3.00
Valla Vista st Sutherland Ft Co	3.35
Old Mission ch C C Chapman	2.50
Golden Eagle st C C Chapman	2.45
S. Keystone ch King Ft Co	3.00
S. Keystone st King Ft Co	2.85
Native Son st A L King Ontario	2.55
La France ch Kuns Ft Co	2.10
Producer xfy Producers' O Co	3.25
Aloha xch Producers' O Co	3.15
Criterion o r Penn Ft Co	2.60
Poppy xfy Haight-Bethell FtCo	3.75
Atlas xch Haight-Bethell Ft Co	
Pointer xch A C G Ft Ex	2.50
Solano o r Stewart Ft Co	2.75
Warrior xch Stewart Ft Co	3.05
Rescue ch Stewart Ft Co	3.00
BLOODS—	
Old Mission fy Edmund Peyche	3.05
Golden Eagle st Edmund Peyche	2.80
Pansy xfy S Marino Gr Pack Co	3.05
Aster (halves) S Marino Gr P Co	2.80
LEMONS—	
Flower xfy S Marino Gr Pack Co	2.85
Flower ch A B Chapman	3.40
Sierra Vista A B Chapman	3.10
GRAPEFRUIT—	
Gold of Ophir Butte Co C A	3.30
Aster C C Chapman	3.65
Signal C C Chapman	3.35
Signet (halves) Colton O Gr A	3.15

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

TANGERINES—	
Pansy (halves)	1.95
MANDERINES— Upland Dist	3.95
Homer Upland Dist	3.40
SEEDLINGS—	
A1. o r	3.95
Square Deal ch	2.10
El Molino ch	1.55
El Toreador st	1.70
Dos Palmos xch	1.00
El Toreador st	
Mission Bells	1.70
Mission Bells	
Gold of Ophir	1.55

SICILY LEMON SALES.

Twenty thousand boxes of Sicily lemons, steamer Irene, were sold today. There was a fractional decline on 360s, otherwise the market is practically unchanged. The bidding was fairly spirited.

Fancy 300s sold for $4.00 to $4.40; seconds, $3.60 to $4.05.

Fancy 360s sold for $4.15 to $4.40; seconds, $3.75 to $4.10.

The next sale will be Thursday, when 32,000 boxes will be offered.

NEW YORK, April 22.—The market is easier. Weather fine. Forty-one carloads of oranges and one of lemons sold.

NAVELS—	AV.
Signal ex fy Stewart Ft Co	$3.50
Solano o r Stewart Ft Co	3.30
S. S. brand ch S S Ft Ex	3.20
Trophy ex fy C C U	3.45
A brand ex fy East Highland C A	3.05
B brand ex ch East Highland C A	2.75
C brand st East Highland C A	3.00
Sunshine fy O G C A	2.60
Trade Mark st O G C A	2.50
Fountain ch	2.60
Fountain ch F H Spiech & Co	3.15
Santa Fe st F H Speich & Co	2.85
Florencia fy J M Riley	2.45
Golden Rule Thom Im. Riv. Ft Ex	3.55
Sweetheart ex fy Highgrove Ft Ex	4.10
Yankee Doodle Highgrove Ft Ex	3.40
La Mesa ex fy Riverside Ft Ex	3.50
Golden Rule ex ch Riverside Ft Ex	3.35
Gold Buckle fy R H Ft Ex	2.95
Lochinvar ex ch R H Ft Ex	2.85
Golden Rule ex ch River. Ft Ex	3.50
Tallyho ch S BFt Ex	2.70
Red Globe, ex ch River. Ft Ex	3.10
Cosmos fy S B Ft Ex	2.55
Homer Q C Ft Ex	3.05
Quail ex ch O K Ft Ex	2.60
San Fernando (red) San Ferndo D	2.65
Red Shield ex ch A C G Ft Ex	2.55
Homer Q C Ft Ex	3.00
Camel Q C Ft Ex	2.95
Violet ch D M Ft Ex	2.75
Jasmine st D M Ft Ex	3.20
Red Print ch Riv. Ft Ex	2.85
Silver Medal	2.95
Carmencita ex ch S T Ft Ex	2.95
Colombo st S T Ft Ex	3.15
Criterion o r Penn Ft Co	3.50
Orchard Thom. Im. National O Co	3.15
Standard st National O Co	3.45
Old American	2.45
Old Mission, fy C C Chapman	2.85
Old Mission ch C C Chapman	2.65
Golden Eagle st C C Chapman	2.80
Laverne Beauties M L Sparks	3.15
Laverne Grove M L Sparks	3.15
Lion Head ex fy I L Lyon & Son	3.90
Eagle Head ex ch I L Lyon & Son	3.65
Tiger Head ex ch I L Lyon & Son	2.95
Whittier ex fy Red. Jct D	3.85
Whittier ch Reds. Jct	3.40
Mt Harrison ex fy F L Sewell	2.95
Whittier ex ch F L Sewell	3.00
Peyton Valentine Peyton	3.10
Independent fy Highland D	3.30
Flower o r Upland D	2.70
Flower st Upland D	2.50
Laverne Beauties M L Sparks	3.05
Producers, ex ch Producers O o	3.15
Mohawk ch Monrovia Hts.	2.80
Mohawk st Monrovia Hts.	2.59
SWEETS—	
Mohawk ch Monrovia Hts	3.00
BLOODS—	
Mariposa fy C C U	3.25
Fountain ch F H Speich & Co	3.45
Golden Rule, ex ch Riv. Ft Ex	3.35
Ruby fy C C U	3.50
Eagle ex fy H G Ft Ex	3.30
Blue Globe ex fy Riv. Ft Ex	2.40
San Fernando (blue) San Fernando	3.60
San Fernando (red) " " " "	3.60
San Fernando (green) " " "	2.80
Whittier ex fy Red Jct D	4.05
SEEDLINGS—	
Solano o r Stewart Ft Co	3 00
TANGERINES (Halves)—	
Blue Globe Riverside Ex	1.60
Bear ex fy O K Ft Ex	2.25
Quail ex ch O K Ft Ex	1.80
VALENCIAS—	
Fountain	4.05
Independent	3.25
JAFFAS—	
Golden Rule	4.05
GRAPEFRUIT—	
A brand	2.00
NAVELS (Halves)—	
La Mesa	1.45@1.40
MANDARINS (Halves)—	
Homer	1.60
TANGERINES (Halves)—	
San Fernando (blue)	1.85

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fever Outfits. See O. J. Weder Co., 555-557 So. Los Angeles St., Los Angeles.

Flower	2.10
LEMONS—	
Independent fy Highland D	4.60
Independent o r Highland D	4.45
Independent ch Highland D	4.10

CALIFORNIA CITRUS SHIPMENTS.

LOS ANGELES, April 23.—Oranges, 227; lemons, 14;. Total to date this season, 15,657 cars, of which 1517 cars were lemons. Total to same date last season, 17,374 cars, of which 1727 were lemons.

EGGS TOO SLOW.

The hens of Kansas and Oklahoma produce 12,000,000 eggs a month for the shippers to handle, besides the eggs consumed in the homes of the state and territory.

This means the shippers send out more than one hundred cars of eggs a month, and the Oklahoma and Kansas Egg Shippers' Association held a meeting at the Midland hotel yesterday afternoon to take some steps to obtain better car service.

The members of the association say the car shortage in Kansas and Oklahoma is now so distressing that large quantities of eggs will spoil before they can be marketed if some relief is not given.

Representatives of the Union Pacific Missouri Pacific, Atchison, Topeka & Santa Fé and the St. Louis & San Francisco railroads attended the meeting and it was made plain that little relief is in sight for the egg shippers. However, it was agreed that every effort will be made to send "return cases" into Kansas and Oklahoma at once. Not only does a car shortage exist, but a shortage of egg cases as well.

The shippers send out eggs packed in cases that are supposed to be returned to them. The railroads are slow in accepting "return cases" for snipment and that works a hardship on the egg shippers. It was agreed to send telegrams to the railroads, naming the localities where cases and cars are worst needed, and depend on the tender mercies of the railroads for relief.

"If the railroads refuse to ship us the boxes or to furnish us cars we're simply helpless," John Stewart of Concordia, Kas., president of the association, said. "We will join in an appeal for relief and we must have it. The egg season is on early in Kansas and Oklahoma. March will probably be our largest month this year. The railroads now promise to furnish us cars where they are most needed. And they're needed in every city and town."—Witchita Eagle.

Poultry Fillers.

WRIGHT'S GREEN MEADOW DAIRY.

The Reed & Bennett auction sale near Watts, on the 17th, was one of the largest and most successful sales ever held in Southern California. The dairy herd sold comprised about 300 cows and heifers, and was probably one of the finest dairy herds in this portion of the state. Messrs. Briggs & Weber opened the sale promptly at the hour, and sold them off at the rate of about one a minute. The prices ranged from $40 to $115, and totaled nearly $2000 more than the owners had estimated, which shows the good demand for dairy cows. The old time Spanish barbecue conducted by Mr. Remerex, was highly appreciated by all. Mr. Wright, the former owner of the dairy, was highly pleased not only with the successful termination of a life long career as a dairyman, but with the happy spirit with which Mr. Briggs held the crowd during the long and trying sale.

It is a mistake to keep the brood sows thin in flesh. They should now be in good condition and should be kept gaining till breeding time, which is not far in advance of this time. The brood sow has a heavy task ahead of her and the more of vitality she has in store the better she is able to do by the next litter. It is hardly right to expect breeding animals to "make bricks without straw."

"Bigga police say, 'Mova on! Move on_ when I sella the banan on the corner, but he say, 'How do! Fine day!' to saloona man who sell all night."

"Mary, is that Mr. Brown downstairs? I thought I heard him just now."

"No'm," Mary answered; "that wuz the dawg what wuz growlin."

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Beyond question the best condition powder made.
We will send to new customers one 25-lb.

$3.00 Pail for $2.00

or one 50-lb. $5.75 double sack for $3.50, and will prepay the freight to any point west of the Rockies. Not more than 50 lbs. to each one, and we reserve the right to withdraw this offer without notice when we have received all the orders we care to fill at these very low prices.

We are presenting no cheap premiums nor offering any gaudily colored pictures, but we are making this strictly legitimate business offer for the purpose of inducing more to try it. We thus hope to add to our large number of steady customers. We are charging up the difference and the freight to our advertising account, feeling sure that a trial of the goods is the very best advertising.

There are no strings to this offer. Just send us your name, your postoffice address, the freight station to which you want the goods shipped, mention this paper, and we will do the rest. Send money order or check with your order, and if everything is not exactly as represented your money will be refunded. The First National Bank of this city, or Bradstreet's Agency, or any leading firm, can inform you as to our reliability. WEST COAST STOCK FOOD has for many years been a standard condition powder in this section. See our full page adv. in the March 7th and 28th issues of this paper, or send for circular with testimonials.

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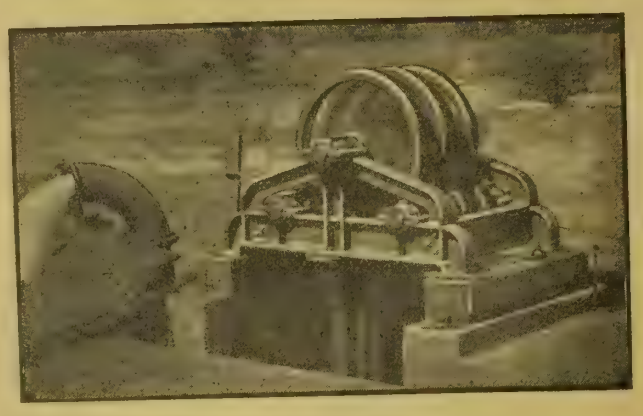

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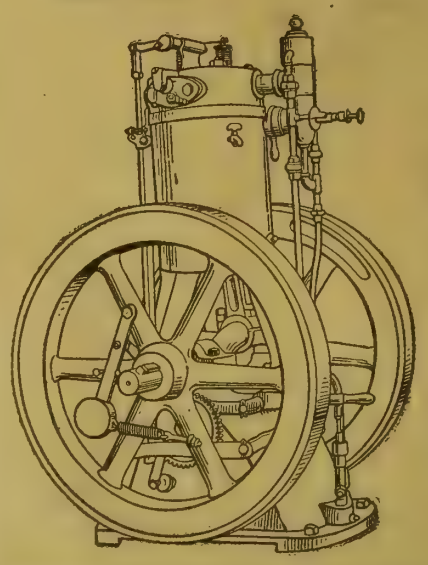

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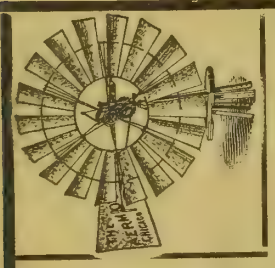

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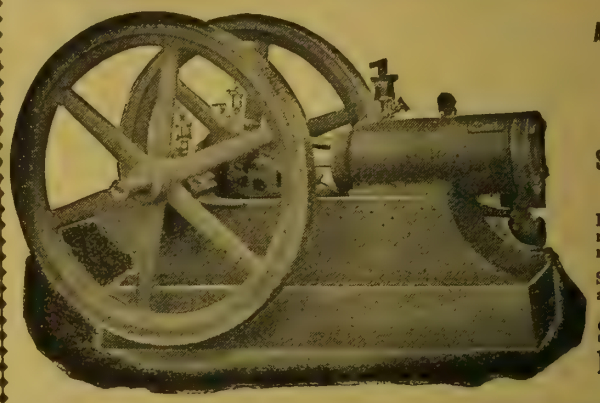

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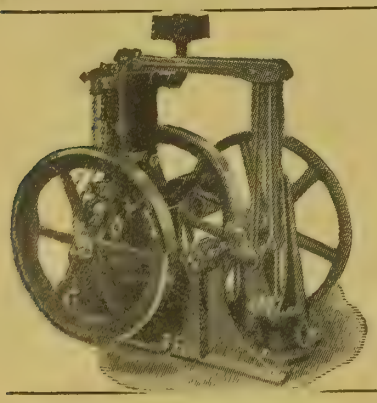

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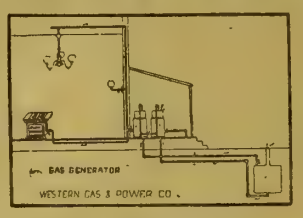

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AUTOMATIC SAFE ECONOMICAL.
Read what Mr. A. W. Foster, President of the California Northwestern Railway has about them:
Gentlemen:
Replying to yours of the 20th inst., I would state that the plant installed for me by the Western Gas and Power Company, on my Hopland Stock Farm, is giving entire satisfaction, and I cannot speak too highly of it. Yours truly, A. W. Foster.
Mr. Foster used an acetylene gas generator before we installed our Western.

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California Cultivator

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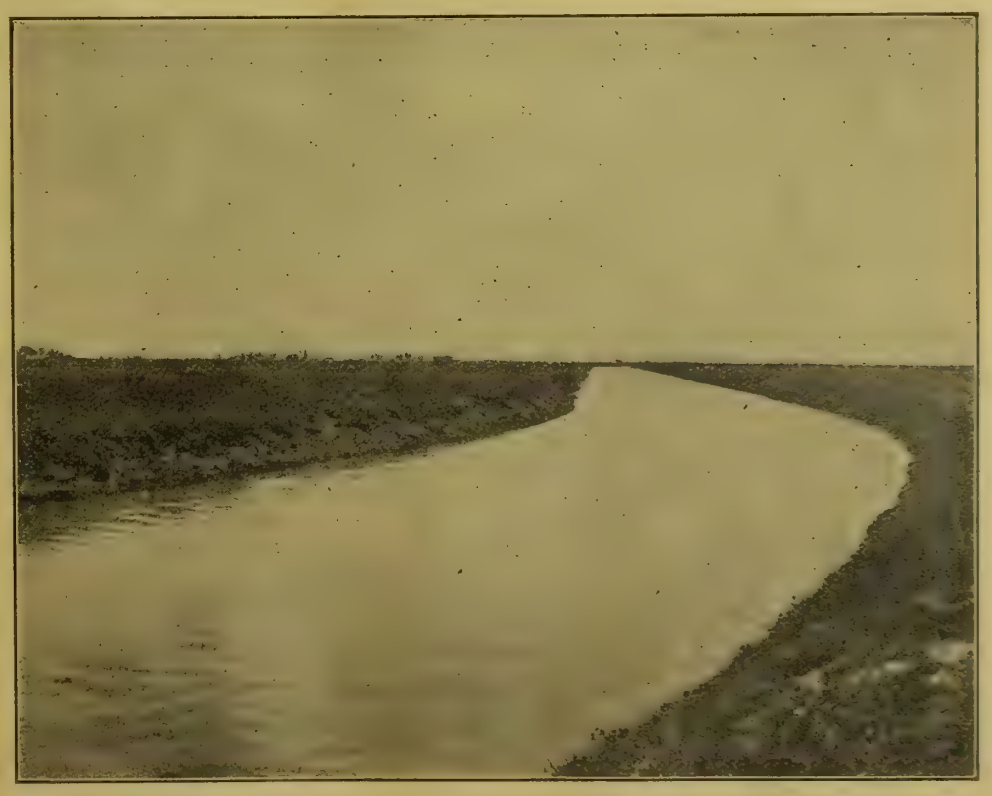
Scenes in Sunny Stanislaus County

Oranges



One of the Lateral Irrigation Canals

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Under the provisions of this law the limitations of an area called "District" are defined, and the electors within that district vote upon the proposition of issuing bonds based upon the land within such district, the moneys so raised to be employed in putting in the irrigation system.

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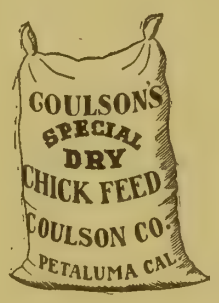
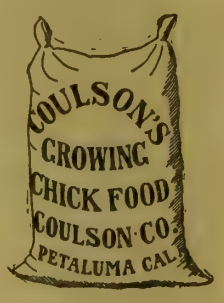


RAISE THEM ON

Coulson's Special DRY CHICK FOOD



for the first six weeks or so, till they are well feathered, strong and active. Then keep up their continuous and rapid growth by feeding

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California Cultivator

Vol. XXVIII—No. 18 Los Angeles, California, Thursday, May 2, 1907 Subscription $1 a year

Pickling Ripe California Olives

Synopsis of a Bulletin Issued by the College of Agriculture, University of California

By FREDERIC T. BIOLETTI, University of California

THE increasing favor with which California pickled olives are received throughout the United States, and the consequent increase in demand, result in the receipt of a large number of letters by the Agricultural Experiment Station requesting information regarding methods of pickling. While no new experimentation has been undertaken in this matter by the Station since the appearance of the last bulletin on the subject, the demand for information makes it desirable to publish a summary on the results obtained, as the editions of former bulletins are exhausted.

While undoubtedly improvements have been made during the last five years in the methods of pickling, more especially in the mechanical details, the essentials of the methods remain the same.

Nutritive Value of Olives.

Pickled ripe olives constitute an extremely nutritious and digestable form of food. They contain a large amount of oil, carbohydrates and some nitrogenous matter, and in some countries replace meat to a certain extent. Pickled green olives, such as those imported from Spain are, on the contrary, indigestable and contain much less nutriment. They are made from unripe fruit and are, therefore, as far as their use as food is concerned, in no way superior to unripe apples or peaches. They are simply a relish and to be used in very limited quantities in the same way as pickled walnuts and cucumbers. A meal of bread and ripe olives, on the other hand, is not only palatable, but nutritions and sustaining, and the amount eaten is to be limited only by the same considerations as that of any other good, wholesome food.

The Queen olives were the best of their kind to be found on the market, and when compared with the first two samples of ripe pickles, which are typical of good ripe Missions, show just one half the amount of nutritive material. This does not show the whole difference, for there is no doubt that the nutriment in the ripe fruit is in a much more readily assimilable form than in the green. The thir sample was grown on an over-irrigated soil, and while inferior to the first two, is much superior to the green fruit in both quantity and quality of nutriment.

Gathering the Olives.

Whether olives are to be used for pickling or oil-making, it is very important that they should be picked carefully and at the right time. For green pickles they should be picked very soon after they obtain full size, but before they have begun to color or soften.

For ripe pickles they should be gathered at the same stage of ripeness as for oil-making; that is, when they contain the maximum amount of oil. This is soon after they are well-colored, but before they have attained the deep black which signifies over-ripeness. If the olives are gathered too green the oil will be bitter; if too ripe, it will be rancid. On account of the different degrees of color in different varieties of olives, it is difficult to tell from their appearance when they should be gathered. When they can easily be shaken from the tree they are ripe enough. If they commence to fall without vigorous shaking they are over-ripe. For whatever purpose the olives are to be used they should be carefully gathered by hand. Rakes or sticks should never be used, as they bruise the fruit and break off great number of fruit-shoots needed for the following year. It is well to sort the olives as they are being picked, separating out the bruised, diseased or over-ripe fruit.

Grading and Sorting.

It is extremely important that all the olives in each lot of pickles should be as nearly as possible uniform in character, in order to facilitate the process of pickling and to produce an attractive appearance. Olives of different varieties, and even those of the same variety from dissimiliar locations, should never be mixed. The first sorting is done while gathering, and the under-ripe, over-ripe and injured fruit is then graded according to size by means of a mechanical grader. In this way the olives are separated into different lots, which will each contain fruit on which the different processes of pickling will act uniformly. A grader adapted to handling soft fruit that will not bruise the olives, must be used. After the pickling process is finished there will be a distinct difference of color between different olives of the same lot. Another sorting according to color is then advisable. This must be done by hand, and either two or three colors may be separated—dark and light or black, medium and greenish, according to the variety.

Unfortunately the consumer has acquired a taste for jet black olives and will accept a lighter olive only at a lower price. This has led to more or less questionable practices which have for their object the retaining of the natural dark color of some varieties, and the coloring of those which are naturally light in color. It is very seldom possible to put a perfectly black pickled olive on the market without the use of some dye or mordant, which, even if harmless, certainly does not improve the flavor or wholesomeness of the food. This practice would be unnecessary if the consumer could be taught that some of the best varieties of olives are naturaly light gray or brownish green in color after pickling, and that any black olive is to be suspected of treatment with substances that are unnecessary for the production of the best quality.

Pickling Ripe Olives.

The successful production of pickled olives is a matter of experience and depends almost altogether on the individual judgment and skill of the producer. No method can be given which is suitable to all cases, and the best method must be modified according to the nature of the olives to be treated. The following scheme, therefore, is to be considered as a mere outline, to be carefully adapted and modified by the operator at each stage of the process:

1. Place the olives in a solution, composed of two ounces of potash lye to one gallon of water, for four hours. Repeat this once, or twice, if necessary to sufficiently remove the tartness.
2. Rinse the olives thoroughly and replace the lye solution with fresh water. Change the water twice a day, until the potash has been removed from the olive, as judged by the taste.
3. Replace the water with brine composed of four ounces of salt to a gallon of water and allowed to stand two days.
4. Put in brine of six ounces of salt to a gallon of water for seven days.
5. Put in brine of ten ounces per gallon for two weeks.
6. Put finally into a brine containing fourteen ounces of salt to the gallon of water.

In order to make this process a success the following considerations should be kept in view:

1. Great care should be taken not to allow the the olives to come in contact with anything that will injure their flavor. The vats or other receptacles used for pickling should be perfectly clean, odorless and tasteless. Earthenware is the best material, but it is usually cheaper and more convenient to use wooden receptacles thoroughly treated with boiling water and soda until they are sterilized and all taste of the wood removed. Any wood (such as pine) with strong taste should not be used. The vats should be provided with a removable wooden grating, fastened one or two inches from the bottom, and a close-fitting, floating wooden cover to prevent access of air, which spots the fruit. On top of the vats should be placed a cover of thick cloth or of wood to exclude the light and dust. Each vat should be provided at the bottom with a wooden spigot for drawing off the solutions. The thickness of the layer of olives should not be more than two feet,

2. It is best to use good potash lye. Some of the brands of lye are so impure that it is impossible, without a chemical analysis, to tell within forty per cent how strong the lye solution actually is when made up. "Greenback lye" has been found the most reliable, and may be considered as one hunderd per cent. pure when making up the solution.

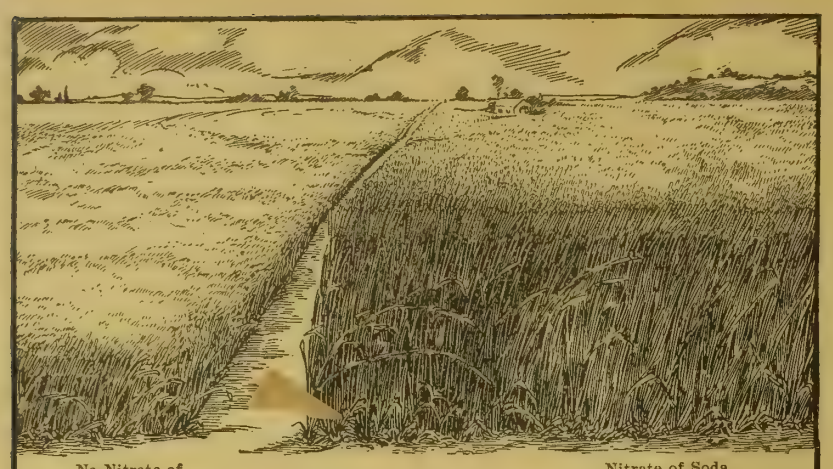
Impure lyes are often used with success, but it is necessary to use more of them. The principal adulterant is common salt, and if soft or over-ripe olives are being pickled this may be an advantage, as it keeps the fruit firm. If we have pure lye, however, we can add the salt if necessary and leave it out if we do not need it, As salt is much cheaper than lye it is better to buy it separately and not to pay the price of lye for it as we do when we buy impure grades.

The length of time which the olives should be left in the lye, and the number of times the lye should be renewed, can only be determined for each variety and each locality. The object is to extract the tartness of the olive, and at the same time to soften the skin sufficiently to allow the tart or bitter substance to be soaked out in the subsequent treatment with pure water. The tougher and thicker the skin of the olive, and the more intense the tartness, the longer must the lye treatment be continued. The lye is sometimes made twice as strong as recommended above, and the treatment correspondingly shorter, but the results are not so good. Just enough lye solution should be used to exactly cover the olives, and occasionally, during the soaking, some of the solution should be drawn off below and poured on top to insure an equal treatment of all the fruit.

3. Only the very purest water should be used, both for the lye solution and for the subsequent soaking. Canal and river water, or any water that contains a great deal of organic matter, should never be used, unless it is practicable to boil it first. Distilled water, such as can sometimes be obtained by condensing the waste steam from a boiler, is the best, on account of its purity and its greater extractive power, provided, of course, it be free from oily flavors. The length of time during which the soaking in pure water should be continued varies very much in accordance with the character of the fruit. If the olives are firm and show no signs of becoming soft it should be continued until the tartness is sufficiently extracted. This will vary usually between ten and twenty days. The moment that the olives begin to show signs of softening, however, they should be placed in weak brine, even though the tartness has not all disappeared. What remains can then be extracted by the brine, which should be changed two or three times, as may be necessary. It is not necessary to change the brine quite so often as the pure water, once in two days being generally sufficient.

If the olives are soft at first, before treatment with lye, or if they are of a kind that softens rapidly in the lye, it is necessary to use brine from the beginning either immediately after treatment with lye, or, in extreme cases, with the lye. This method suggested by Prof. Hilgard has been used with marked success. The lye solution in this case should be made by adding two ounces (or less, if the olives are not very bitter) of lye and four ounces of salt to each gallon of water. As the lye acts much more slowly when used in combination with salt, it may be allowed to stay on the olives for a longer time without injury—eight to twelve hours or even more. This lye and salt solution tends to harden and shrink the olives. The shrinkage, which occurs when brine is used from the beginning on naturally soft olives, is not a disadvantage if not carried too far, as such olives are generally too watery to be palatable or to keep well. They can, moreover, if shrunk too much, be made plump again by a

Continued on Page 476



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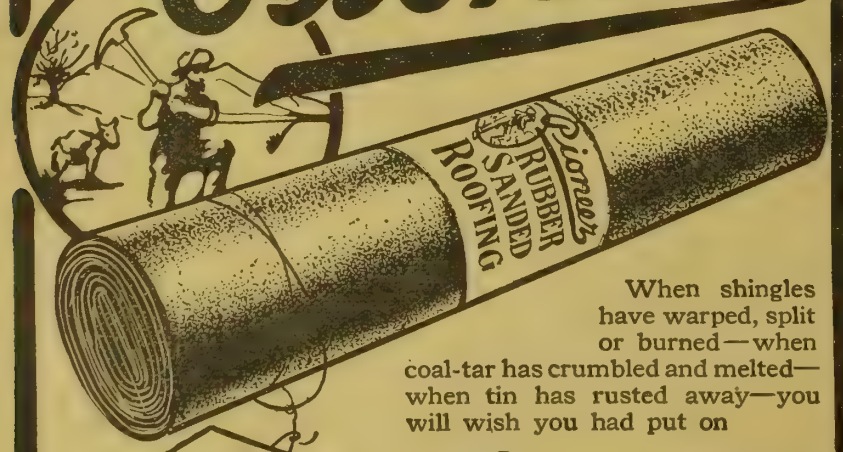

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Deciduous Fruit Culture

By J. W. MILLS

SOIL, CLIMATE AND VARIETIES.

WHY is it that every year there is more or less digging up of one variety of fruit trees and planting out another? It appears to us that too much confidence has been placed in the climate and soil.

It is true that we pride ourselves on our superb climate. It is nice to live in, but it is not good for everything. Certain fruits require certain climatic conditions to produce at a profit that should be expected. While conditions may be conducive to proper growth, they may not be right for fruiting. The olive in most sections of Southern California demonstrates that.

Olives were planted by the wholesale in the south at one time. The trees thrived exceedingly well, bloomed abundantly, and some seasons produced good crops. Were the trees not exceptionally hardy and full of vitality, perhaps so many would not have been planted. Nearly everybody who thought that they had land that would raise olives planted a few, and many went into it extensively before it was definitely demonstrated that they would pay.

It turned out that the conditions which favored this aspect of the industry were not at all known. Incidentally, Northern California caught the boom. It was a weak boom as all of their booms are as compared with the lower end of the state, and it turned out that the olive was at home there as regards climate and soil.

In Southern California, it was demonstrated beyond a doubt that the Washington navel could be grown to a greater degree of perfection than any place else it had been tried. Had it acted as the olive did, no amount of cultural persuasion could have made our present area turn out nearly 20,000 carloads of navel oranges per year. We may say that Southern California has proved to be a perfect home of the navel, but this is too broad.

Two hours' ride, and perhaps less, will connect us with two localities, one of which is admirably adapted and the other much less so to the growth of a certain variety of orange. A variety of soils will produce equally as good oranges, but the climatic conditions are wrong in many instances. Florida found this to be the case with the Washington navels. Situations near the coast in Southern California produce Valencias that keep on the tree and sell better than those raised further inland.

At the Pomona Experiment Station there were from 150 to 200 varieties of plums, nearly all of which grew and blossomed well, but not more than twenty bore good crops. This continued for about ten years. When the trees were young, more bore fruit than when they reached maturity. All of these varieties of plums are desirable varieties in some parts of the country.

Another striking example was with the Persian grapes. These, with the exception of one or two never bore enough to make them worthy of record. When cuttings were sent in to Coachella valley some varieties that were absolutely barren at the station, bore immense crops. Some varieties bore continually through the growing season there while in their former place they showed no sign of such qualities.

Unprofitable planting will never be so extensive as formally for the reason that experience extends over a longer period of time. In plain English, we are learning among other things, to "go slow."

SPRAY EARLY.

If you have some Nonpareil almonds, the chances are that they will have shot-hole fungus or prune rust. The latter is the most destructive of the foliage of this variety.

In fact it attacks nearly all varieties of almonds, but the paper shells are particularly subject to it. Spraying with Bordeaux mixture will prevent the attack of this disease if it has not made its appearance or is not just entering the tissue of the leaves. A good microscope and some experience will be necessary to determine if the latter is the case.

Spraying late in winter where the land can be run over immediately after a rain will be the safest. Large plantations or trees on heavy land that is liable to be wet late in the season, should be sprayed early so that there will be no danger of the season going by without spraying. It must be remembered that the prune fungus will strip the entire foliage from the almond tree in a short time and that means a deterioration of the trees and the crop.

POOR PRUNING.

A few summers ago I saw an orchard that had been pruned with an axe the previous year. If anyone had done as poor a job trimming out my grove of despised second-growth post-oak, he would have had to quit as soon as I found out.

An axe is a poor tool with which to prune an orchard. I know of no better tools than a sharp saw and knife with a keen edge, the one for the large limbs, the other for small limbs and water sprouts.

Besides the usual removal of cross branches, those that are too low and water sprouts, there is this spring in many orchards the added work of taking off branches that were broken by the heavy crop of last year. Much care should be used in taking these off so as to leave a smooth surface close to the trunk or large branch where they are removed. A stub six inches or a foot long will never amount to much of anything as a bearer of fruit. It only disfigures the tree and induces disease and decay. Take off the broken limbs as you would any other that you want out of the way.

A good way to have a smooth cut where a large branch has to be removed is to cut it off a foot or more from where you wish, then cut off the stub that is left. In this way you run no risk of having the branch tear the bark down as it falls. It also often enables you to get closer to the tree or large limb with your saw than you could any other way.

The wounds made in removing branches an inch or more in diameter should be painted the day they are made.

We paint smaller wounds, as the spring winds check the wound so soon, and you never know the coming day's weather; therefore it is best not to "wait till tomorrow" before covering the wounds. White lead and oil make the ideal paint for this purpose. As we have but a few hundred trees, we buy the mixed paints that come in half-gallon cans. They are ready to use as soon as stirred thoroughly.

When burning the brush, it must be far enough from the trees to prevent the heat from injuring them.

FINE OLD APPLES.

I noticed an article in your paper of April 18th stating that there are thirty-five-year old apple trees at the Hicks ranch in San Bernardino county, California, that have a ditch of water running constantly within five feet of the trunks and yet are very thrifty and bear nearly every year apples of the highest quality.

The writer being a present owner of the property wishes to correct the article somewhat. The trees are twenty-six years old this spring; they are on a margin of a small stream of water constantly running at the root of the tree and since coming into bearing never have failed bearing a good crop, unless killed by frost. They now bear from a thousand to fifteen hundred pounds to the tree. There are fifteen of them in number. The varieties are of the White Winter Pearmain, Kentucky Red Streak and New Town Pippin.

The ranch is situated near the famous summer resort, Oak Glen, nestled in the foothills of "Old Grey Back," the elevation being about 5000 feet. It is also about sixteen miles from Redlands.—A. A. Warren.

TRANSPORTATION FACILITIES.

At a meeting of peach growers held in Atlanta the first steps were taken to secure better shipping facilities and more favorable freight rates on fruit products from that part of the country to the Eastern markets. Georgia growers claim that it costs more to ship their peaches to New York than is charged for hauling the same fruit from California to the same market. Freight rates on fruit are much higher than rates for hauling dressed meats, both classes requiring refrigeration.

At this meeting a transportation committee was appointed, and it was decided to assess members of the organization from 25 to 50 cents per thousand trees, to defray necessary expenses of suits, if legal action is necessary to secure an adjustment of freight rates. With something like 10,000,000 bearing peach trees in Georgia alone, this assessment should provide enough money to prosecute this work vigorously.

Another matter brought before this meeting was the service given by refrigerator car companies, and a resolution requiring them to place in each refrigerator car a recording thermometer was referred to the transportation committee. It is claimed that it frequently happens that, notwithstanding the cars are well iced when they leave the shipping station and are well supplied with ice when they reach their final destination, considerable fruit will be found to have spoiled, and this is undoubtedly due to the fact that somewhere in transit the cars were without ice. A recording thermometer would show the temperature at all times between the shipping station and the destination.

It is believed that the Southern railroads will make lower rates on fruits this season. Prospects for a peach crop are very fine, and from present indications the problem of distribution and transportation will be an important one.

SPECIAL CLEFT GRAFTING.

In grafting an apple seedling, it sometimes happens that the stock to be grafted is a little too small to work well in regular cleft grafting and at the same time too large for whip grafting. In this event a modification of side grafting can be successfully used. It is better than cleft grafting when there is only a short piece of the seedling left, because the ordinary cleft graft is more likely to get knocked out of the cleft during the season, while this kind of graft is fairly well protected by the stock. At about the surface of the soil, or slightly above it, a horizontal shallow cut is made with the saw, and a chip of wood is detached from the top of a slanting cut with the chisel, making a niche. On the shelf of the niche a cleft is made, in which two scions are inserted, the scions being cut as in ordinary cleft grafting, but thinner. The completed graft should be wound tightly to increase the pressure and hold the scions in place. The wounds should be covered with grafting wax.

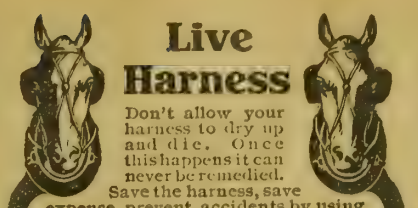
GLAD I AM A FARMER.

"I'm glad I am a farmer,"
Sang the sun-browned lad I wed;
And with every tone,
And with eyes that shone,
Came truth of all he said.
"I'm glad I am a farmer,"
He sang it morn and night,
And his world grew gay
Day after day,
While the home-nest grew more bright.

"Yes! Glad I am a farmer,
The sturdy plow to wield;"
And he worked away,
The live-long day,
In garden, yard, and field;
Till his years had grown a-many,
And furrowed hand and brow;
Yet he sang the same
Old song of fame,
And he sings the same song now.

"Right glad I am a farmer,
I rejoice to tell it o'er;
For since I tried
Life's city side,
I love the old farm more!
Henceforth I'll stay a farmer,
And those who wish to,—may
Stay city-folk;
But 'tis no joke,
That I'll grow corn and hay."

—Nellie Hawks.



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P. S.—See Article in Cultivator on Page 550, issue of December 6th.

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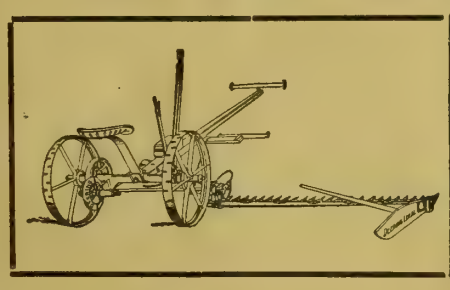

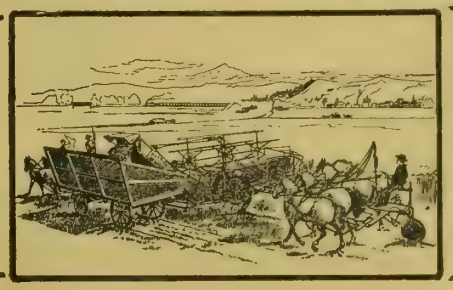

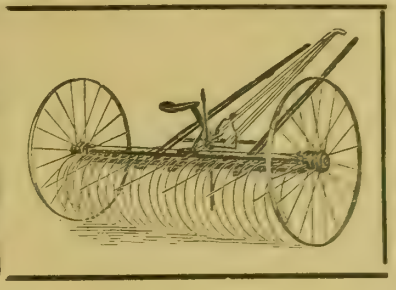

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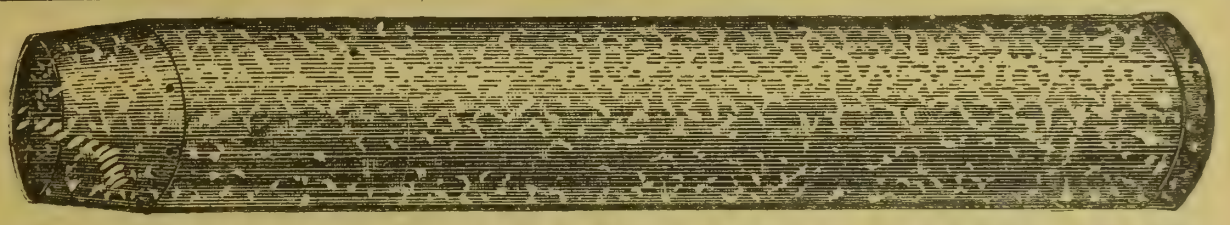

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BUTTER MAKING.

THE farmer's wife making butter from one or two cows has difficulties to overcome that are not encountered in the creamery.

There are four ways of handling the milk for buttermaking. The first or primitive method of buttermaking was adding the milk to that already on hand and stirring down the cream until the whole mass was soured. Then churning it all.

This was merely following out the accidental discovery made by primitive man, that the milk in the skin bags when carried on the back of camels churns itself during the ride. This was rather an expensive way to produce butter and some ancient with nimble wits, reasoned out the wherefore. The expense was nearly as great as the first roast pig. If you have not read the story told by Charles Lamb in his inimitable way, better do so at once. It is fully as funny as Mark Twain's Jumping Frog.

Whole Milk.

When the whole milk is churned the result is a heavy loss of butter fat, as only the larger globules are saved. The smaller ones are held in the mass of curds. The buttermilk left is rich feed, but usually full of gaseous curds made by bacteria and it quickly turns rancid.

In order to secure as much of the butterfat as possible the churning of whole milk has to be done at a lower temperature than when the milk was skimmed and only the cream has been put into the churn.

Shallow Pans.

The second way is raising cream in the shallow pans. The pans are carefully placed in a cool room in the summer; in the winter a warm room is chosen.

The desirable temperature is about 60 degrees, and dryness rather than dampness is best. The pans should stand perfectly quiet for thirty-six hours when the milk under the cream will be clabbered.

Skim off the cream carefully. Take a silver teaspoon, slip the point of the bowl down close to the edge, holding the front of the spoon against the pan, then gently move the spoon along the edges pushing back the cream without disturbing the milk. Do not be an old granny and use your finger for this purpose as you may introduce bacteria enough to spoil the butter. It will certainly spoil the appetite, of anyone looking on, for the butter.

The ordinary flat skimmer is then slipped under the edge of the cream and it is lifted carefully and placed in the cream jar. When the skimming is finished stir the milk thoroughly into that already in the jar. The closer the skimming—the less milk in the cream—the better keeping will be the butter.

Deep Setting.

The third way was an improvement on the shallow pans as the milk was less exposed to taints and dust. The deep or gunshot cans were placed in cold water and the cream removed with a special dipper made for the purpose.

This did not produce a heavy cream and as a rule made no more butter than the shallow setting. The cream clings to the edges and sides badly, and it requires considerable experience to successfully skim clean. The deep setting undeniably made better butter than that set in any other way, for the best had not as yet come to the knowledge of the scientific world; this is the centrifuge?

Farm Separators.

The many taints of butter are controlled largely by using a separator, for it is easy to control the temperature of a small quantity of cream rather than a large quantity of milk.

The butterfat in heavy cream does not afford as great a medium for the bacterial action as the more watery milk. Before the days of separators the faults with butter made from unripened, or irregular ripened cream were numerous. This fault was usually blamed on the churn.

The American genius rose to the occasion. The Government Year Book makes the following surprising statement, that in the seventy years preceding the introduction of the separator that a churn was patented nearly ever twelfth day of the year. What might the average have been if a few had not been rejected no one will ever know! It was all unnecessary!

With the separator in use it soon was understood that the churn was of minor importance. If the churn was one that could be readily cleaned its actual shape mattered little. It was simply a concussor or mixer-up of the contents.

Ripening Cream.

When cream is ripe for the churn it has an acid taste that is agreeable when eaten on bread. The aroma is pleasant.

If the cream has been held at 60 degrees for two days, and is still sweet it should be helped to sour by the use of heat, lest some undesirable bacteria commence to work in it. Warm the cream by standing the jar in a can of hot water and stir slowly until it reaches 90 degrees, then cover for ten minutes and cool down slowly, in two or three hours it will be ready to churn.

Do not churn until the cream is smooth and acid and thick. Cream from pans rarely requires to be ripened, it is well if the cream is thick and acid to churn. Do not add any cream after the last twelve hours or the butterfat will simply remain in the buttermilk; take that last cream to start a fresh lot of cream with. It can be held in any form of pitcher until the cream jar is emptied, scalded and sunned for awhile.

Churning.

The butter should come in twenty or thirty minutes from properly ripened cream. When butter comes in five minutes the cream is over-ripened and the butter will go off its flavor quickly. While the style of the churn does not matter greatly, still a wooden one, if it is of the box or barrel type, is the best as it can be kept freer from taints. The wooden box type is to be preferred to the up and down churn; if these are used it is best to have it tin, not stoneware. The objections to stoneware are that I have had two women that always made gilt-edged butter suddenly have the butter become bad on them. In both cases they used the stone jar to hold the cream while gathering it for the churning. After hunting every cause possible for the badness of the butter I finally took home a pint of the cream from the pans and ripened it and churned it in the glass cream whip. It made fine butter that was good for fifteen days under ordinary treatment. Then we experimented and found that the stone churns were holding the bacteria. The second woman that had the trouble told her husband. He said, "Lets see," and took a hammer and broke up the jar when a large place was found that was porous, yet had no visible opening, but smelt foully of decaying milk.

Care of the Churn.

The care of the churn must be most careful. It should be washed, then scalded and dried in the open air, after having been used. Before using it again scald it and cool with water before putting in the cream. In churning, have the churn with less, rather than more, than its capacity. The speed of churning may be fast until the cream breaks, then if it is being turned by hand the admonition to turn slowly will be gladly obeyed.

When the butter is the size of wheat grains stop, draw off the buttermilk, letting it run through a strainer, put

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in the plug and then add a liberal quantity of cold water in which a handful of salt has been dissolved. Rock the churn slowly from side to side, for a couple of minutes, to separate the particles of butter, let it stand a couple more minutes in all, take about ten minutes to this process.

Then let off the water, using the strainer to prevent loss. If the last of the water runs clear the butter is ready to take up. If not clear repeat the washing, but it should be clear if sufficient water was used the first time and the butter was in a granular mass, and not balled, by churning too long after it had gathered.

Working.

Take the butter up with the two ladles, for the hands must never touch butter if a gilt-edged product is to be made. Put the butter down lightly.

Shake a little salt on it as it is piled up. Work the salt in lightly at the rate of half an ounce to the pound; if the butter was washed in salted water. The less butter is worked the better, after the buttermilk has been dissolved out of it. The salt used should be fine, so it is better to sift it before using to remove coarse particles.

The butter can be churned salted if preferred, and in cold weather this is an excellent way; in the summertime the butter has often to be placed in the ice chest with the salt on it and not worked in until the butter hardens.

There will be no mottles on butter that is promptly salted from the churn, as it then contains moisture enough to dissolve the salt and not to have one globule of butter salty and the next without salt. Salt being a chlorine bleaches a trifle the globule of butter it clings to, while the one unsalted is the natural color; this makes the mottles.

CLEAN OR DIRTY MILK?

Very few are as careful about having everything about the dairy barn or milking shed as clean as it should be. Of course, but few cows in this State are kept in a stable even over night, so that they do not get into the filthy condition described by the editor of Modern Farmer, yet we fear that many of them are not as clean when milked as they should be. The item from the Modern Farmer is as follows:

We have seen some very filthy dairy barns lately and have been made to feel that milk is a very dirty thing handled as it is by many people. Overhead in a dairy barn is not a very good place for chickens to roost, especially if they go to roost before the cows are milked. A pail out of which cows are watered is not a very good thing to milk in. A cow that has both of her hind quarters covered an inch thick with filth cannot furnish clean milk. We have seen all of these conditions represented within a very short time, and this where milk was being sold to others. Of course, these are extreme cases, but are you quite sure that all the milk you use is clean and healthy? Think about it, and then go out and look the cows over, examine the barn and everything that the milk comes in contact with from the time it is drawn from the cow's udder until it is consumed, and see if there is not an opportunity for improvement even at "our house." Milk can be kept clean and sweet, but much of it is absolutely filthy and unfit for human food. It should not take one very long to get his regulation "peck of dirt" if he consumes some milk we have seen. It is no wonder that some people are sick; the greater wonder is that babies that are forced to live on such milk do not die off like sheep with the rot.

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Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fever Outfits. See O. J. Weder Co., 555-557 So. Los Angeles St., Los Angeles.

THE BEST LINE OF FARMING.

That this is true is very plain, unless we make an exception in favor of poultry keeping. From both lines of business there is an income every day in the year. The vicissitudes of weather and drouths have much less effect on the crop and all things considered it is certain that an investment in it is likely to be fairly profitable without much difference on account of wind or weather. The editor of the American Farmer says:

Dairying is the best line of farming because it best maintains the fertility of the soil, gives constant and steady employment and produces the best type of manhood. On the dairy farm we find better homes, better social and political development of mankind. The opportunities to the present day dairyman are many. The business affords great opportunity for improvements in increasing soil fertility, in securing better farm equipment and in breeding and selection of the working herd. The salvation of the country depends on agriculture and the foundation of all agriculture is the soil. Dairying is the greatest wealth-producing industry in the country and is needed everywhere, as everywhere there is a constant demand for dairy products.—Florida Agriculturist.

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did. You can't afford to lose the price of one or more cows each year—there's no reason why you should. Get a **Tubular** and get more and better cream out of the milk; save time and labor and have warm sweet skimmed milk for the calves. Don't buy some cheap rattletrap thing called a separator; that won't do any good. You need a real skimmer that does perfect work—skims clean, thick or thin, hot or cold; runs easy; simple in construction; easily understood. That's the **Tubular** and there is but one **Tubular,** the **Sharples Tubular.** Don't you want our little book "Business Dairymen," and our Catalog A. 200 both free? A postal will bring them.

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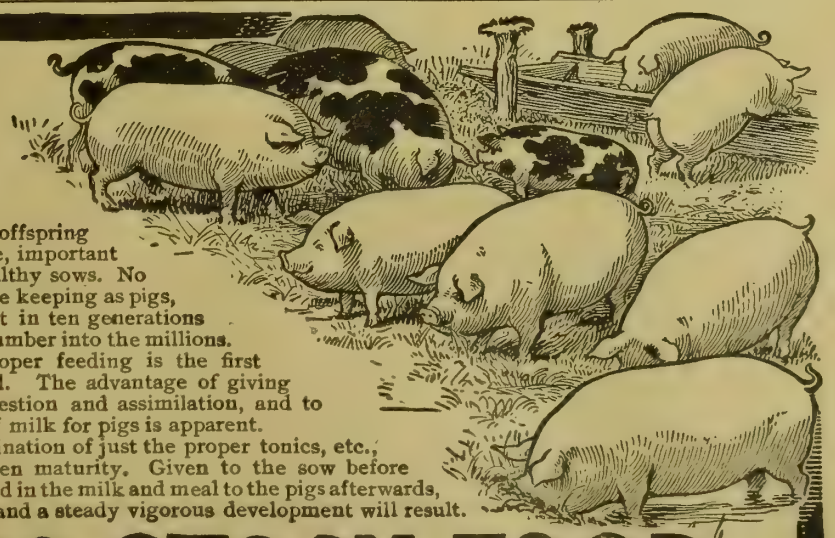

The sow is supposed to impart to her offspring her own constitution. It is, therefore, important that we raise pigs from vigorous, healthy sows. No stock will give as much return for the keeping as pigs, if properly cared for. It is said that in ten generations the progeny from a single sow will number into the millions. But disease must be avoided. Proper feeding is the first necessity and cleanliness the second. The advantage of giving a sow a tonic to insure proper digestion and assimilation, and to increase both quantity and quality of milk for pigs is apparent.

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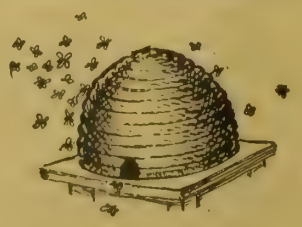


The Ornamental Garden

By ERNEST BRAUNTON

ARBOR DAY.

THE Department of Agriculture has issued an interesting leaflet on Arbor day, showing what the lesson of the day should be—the use and value of the tree in the life of the nation.

It points out that the tree which is significant is, of course, the forest tree as distinct from isolated specimens and advises that the best age to interest a child in forestry is between the ages of 6-7 or 13-14 when all such things as birds, beasts, flowers and trees appeal most strongly to the developing mind. A number of interesting topics are discussed from the muddy freshet, discolored by the soil the rain has dislodged, to the bursting blossoms and seeds of trees. Planting suggestions and the selection of a suitable day for Arbor day are also discussed and the interesting leaflet should certainly be in the hands of all who have anything to do with the training of children along these lines.

NORWAY SPRUCE.

The Norway spruce develops a straight, undivided trunk, with small slender branches which become somewhat drooping in later life.

In the open the limbs, extending almost to the ground, form a well-shaped, conical crown. The forest-grown tree retains its conical form, but the crown is much more compact and is restricted to the upper portions of the trunk.

In size, the Norway spruce is not unlike our red spruce. Trees 80 to 100 feet high and 2 to 3 feet in diameter are common in Europe on good situations.

This species is not indigenous to North America, but is a native of Northern Europe and Asia. It is almost invariably confined to cool, somewhat moist situations.

In Europe it ranges from the shores of the Baltic and the lower mountain slopes of Scandinavia to the Alps, where it occurs at an altitude of 6,000 feet. Planting has widely extended the limits of its distribution. It was introduced into England in the sixteenth century and in the United States has been grown as an ornamental tree for many years.

The possible planting range in this country is not yet fully known. As a rule, it will thrive throughout the entire Northeast and southward at the higher elevations. In the west favorable results have been attained only as far as the eastern part of the prairie region, and then only in the most protected localities.

PASADENA FLOWER SHOW.

The second annual spring show of the Pasadena Gardeners' Association opened April 4 in a large tent on North Fair Oaks avenue. The entries were numerous for all of the 71 classes and a very fine display was made, much superior to the first show held a year ago.

A feature of the show was the large cement tank in the center of the tent for aquatic plants, the usual greenhouse and other subjects being arranged on stands around the sides. In addition to $300 offered in prizes many special premiums were awarded. The show was kept open until April 6.

TRUE AMERICAN HOLLY.

Ilex opaca is an exceptionally beautiful native evergreen tree from the Southern states. The dark, glossy green leaves, with rough, crinkled edges and sharp spines, and the brilliant red berries form a strikingly handsome combination of color. One of the most sought-for evergreens for Christmas decorations.

THE SMALLEST TREE.

The smallest natural tree is the Greenland birch. Although its term of life is from 75 to 130 years, it seldom reaches more than ten inches in height under the most favorable circumstances. There are forests of these trees in Greenland half a century old and under five inches in height.

ROSE SOILS.

Where it is possible, plant roses in a soil underlaid with clay, or, if this is impracticable, select a moderately moist, compact soil. If these conditions do not exist naturally they can sometimes be made so artificially. Much can be accomplished in this direction, either by hauling clay, if the distance is not too great, or by incorporating humus in soil that is naturally loose.

In this connection, it may be well enough to mention that climbing roses often make the most desirable plants. They are almost always strong growers, while some of the finest varieties of bush-plants are rather slow growers. These climbing roses can, with a little pruning—and all varieties should be pruned each fall—be made to form excellent bush roses, if that form of growth is desired, or can be readily trained on a porch or trellis.

AMERICAN TRUMPET VINE.

Bignonia radicans is a strong-growing climber, which clings tightly to whatever its growing shoots touch. Forms a mass of green; particularly desirable for planting near old stumps, rocks or fences where it is desired to cover an unsightly object. Bears brilliant-colored small flowers in clusters during the summer months.

JAPANESE BARBERRY.

Berberis thunbergi is a dwarf-growing spreading plant with small, neat foliage and sharp thorns. The flowers are white and are followed by brilliant red berries in great abundance, during the latter part of the summer, which hangs on the plants throughout the winter. It is used for hedges and for planting in masses.

HARM DONE BY DODDER.

One of the latest leaflets of the Board of Agriculture and Fisheries of Great Britain deals with dodder.

The question to what extent the various species of dodder are harmful to agricultural crops is one which is of considerable interest to the farming community, and for some years past the agricultural press has contained many references to the prevalence of the pest in various districts.

Moreover, in 1905, as much as 11 per cent. of the clover seed samples examined by the botanist to the Royal Agricultural Society were condemned owing to the presence of dodder seeds, while two samples of red clover contained no less than 6 per cent. Some information, therefore, on the several species of dodder, the methods by which they are spread, and the best means by which they may be suppressed or avoided may at the present time be of value to agriculturists and seed merchants alike.

Various suggestions are made for prevention and remedy. Among these it is pointed out that where dodder is found infesting a crop, however small the patch, steps should at once be taken to destroy it. This may best be done by digging up the infested plants and burning the whole, in situ, by covering the area 6 to 9 inches thick with long chaff, sprinkling it with paraffin, and then firing it.

Tearing out the dodder with a rake is to be condemned, as this only serves to spread the evil. Infested clover or lucerne should not be fed to stock, as the seeds may pass through the alimentary canal unaffected, and Frank mentions a case in which a field was actually infected by means of manure from young cattle. In cases where the infestation is very extensive, covering the larger part of the crop, it is perhaps better to plough the whole under before seeds are formed. M. Garrigou called attention in 1904 to the value of calcium sulphide as a means of combating dodder and other parasites, and his experiments show that this substance is very clearly superior to sulphate of iron. It should be applied in the form of a powder when the dew is on the leaf. Above all, good cultivation in the widest sense should prevail, and all fields, hedges, and ditches should be kept clean and free from weeds.

The Vegetable Garden

By ERNEST BRAUNTON

GROWING ASPARAGUS.

BELOW we give two methods of growing asparagus, taken from "California Vegetables," by Prof. E. J. Wickson. The first is from a grower in the Santa Clara Valley; the second by an Orange county grower:

William Boot's Method.

Next March (for I think March the best month to plant in, all else being equal) choose a good piece of land, the very best is none too good, and plow just as good as you can.

I plow with four good horses on a single plow, and plow one foot deep, getting the land in as good condition as possible. Take a good team and draw furrows where the rows are wanted, going twice in the same place, just as deep as we can get the plow to run, throwing the furrow each way, making the distance six feet between rows.

Then carefully take up the plants, carefully separate them, for if they have been very closely grown they will cling together; spread out the roots as you plant them, clearing away all clods or anything that may hinder the growth. Plant not closer than three feet between plants in the rows. For field planting for the market by all means do not plant closer than six feet between the rows, and three feet apart in the rows; for if there is a plant that delights in plenty of room and air it certainly is asparagus. Cover the plants about two inches deep, and during the summer cultivation the pulverized earth will drop into the ditches, and by the time the season's cultivation is over the ditches or furrows will be nearly full, which finishes the first year in the field.

S. J. Murdock's Method.

The rows should be four feet apart and the plants eighteen inches from each other in the rows, and even more room would be better if the land is not too valuable.

After the ground is well plowed and finely harrowed mark out the rows the desired distance apart with a plow by going twice in each row, throwing a furrow each way from the center of the row, and from eight to twelve inches deep; then go one or more rounds in this with a cultivator closed up, so as to loosen up the soil well in the bottom of the row.

If you have any fine fertilzer put it in the row where you want to set your plants; mix well with the soil and set your plants over it. Place the plants in the bottom of the prepared furrow, spread out the roots and cover crown and all about two or three inches—the lighter the soil the deeper the plants should be placed—so as to secure the proper moisture till they begin to strike root.

After the planting has been done, take a light steel garden rake, or if the rows are even enough, we would prefer the wheel hoe with the rakes on, and stir the soil the whole length of the rows. Then, when the roots begin to grow and show themselves three or four inches high, the soil should be gradually hoed or cultivated to the plants till the surface is level. The ground should be kept moist, and in most localities irrigation will be found necessary to secure the best results. Do not neglect thorough cultivation, but after the roots begin to fill the ground do not work too deep, as there is danger of injuring them.

In the fall or early winter, when the tops have turned brown, the ground should be cleaned and all rubbish burned, for if delayed the seed will drop and get scattered, which will come up and may prove eventually to be the worst weed the grower will have to contend with, for if allowed to grow after once started it will soon fill the whole ground with a mass of roots, and very soon spoil the whole patch. As soon as the ground is cleared the whole field should be well cultivated, and coarse manure spread over the entire surface, so that the rains can dissolve and carry down the soluble plant food to the roots. As the period of rest here in our mild and warm winters is very short with this strong and persisting plant no delay should be indulged in furnishing the necessary plant food.

METHODS OF GROWING TOMATOES.

There are two methods in general use in the production of tomato plants to be set in the fields. The hotbed method is used entirely for early crops. Wooden boxes or frames so-called are set up upon a pile of fermenting material, usually horse stable manure, which is covered with an inch or two of rich soil.

The boxes are covered with glazed sash which are daily lifted to allow the plants a proper amount of air in order to produce stocky plants, which when three or four inches high, are transplanted into other frames of rotted manure and rich soil. No heating material is used in the transplanting beds; as with some night cover the sun gives sufficient heat. Plants are set four to six inches apart each way and are quite large by the time the weather is suitable for planting out. They may then be cut out with a four-inch block of soil and set in the field.

The other method of growing plants in the open air is simply a matter of selecting a suitable location, generally in the shelter of some big woods. The plot is carefully cleaned and prepared by plowing in a quantity of short, well-rotted manure. A quick acting fertilizer is then applied and chopped or raked in.

Pathways or alleys are marked, leaving beds about four feet wide upon which the seed is sown thinly broadcast. If plants come too thickly they should be thinned as they are weeded. Tobacco-bed sheeting or plant-bed cloth must be used to keep away flea-beetle which will do untold injury in the cool dry weather of early spring. These plants are pulled as soon as the weather is settled and set out with a peg or dibble on the prepared lists.

GROWING SEED.

To growers who save their own seed, and this may be profitably done in most cases, attention is called to the fact that careful notice should be taken of a few plants that seem to be just the type that is wanted and seed saved from these.

The practice of picking out all the large and finest fruits is not recommended, because very often when the fruit is large the yield is not proportionately so. An illustration of this occurred a few years ago.

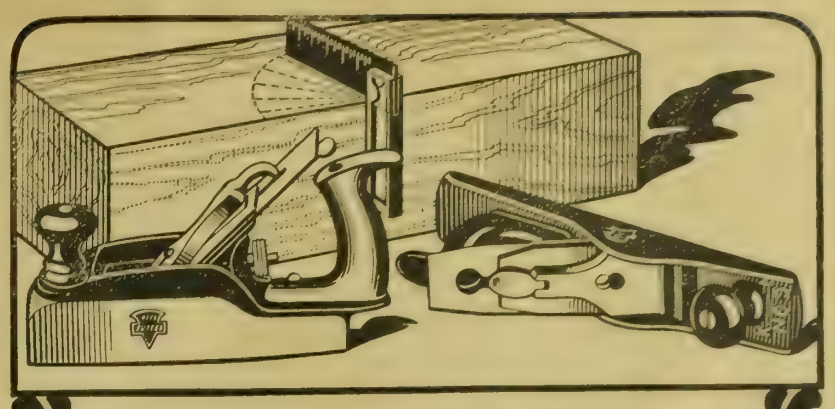
The tomato called "Enormous" was sent out. The plant was not at all branching, the stem and foliage being thick and heavy. The blossoms come in clusters of two, of which usually only one fruited. As a result the fruits produced were comparatively few in number but of large size, averaging throughout the season eight ounces apiece. This gave a yield of something less than two tons per acre. On the other hand, the variety "Freedom" which was small fruiting, but quite branching and free flowering in habit, gave fruits averaging three ounces in individual weight and over twelve tons per acre.

The necessity of care in the selection of the plant rather than the fruit is therefore quite apparent.

VEGETABLE SEEDS.

It pays to have good seed from good stock and if possible it will be well to procure the supply from the originator's own growing. There is no doubt that a variety which has passed from the originator's hands and into the hands of ordinary seed growers, who are not familiar with the ideal type as first selected, is sure to change it and perhaps for the worse. Therefore, if the originators are growers, try to get seed from them.

Jack's Mamma—There were three slices of cake in the cupboard, Jack, and now there are only two. How does that happen? Jack—It was so dark in there, mamma, that I didn't see the others.



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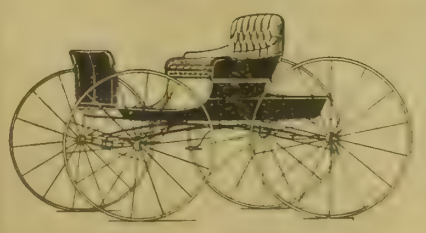

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California Horticulturally

By JOHN ISAAC, Sacramento, California

PROF. WICKSON TO GIVE WAY.

IT IS reported that Prof. Wickson, who has been acting in the position vacated by Prof. Hilgard, as dean of the agricultural college at Berkeley, is to be superseded in that place by an eastern man, and naturally there is much dissatisfaction thereat. If an eastern man can fill the position to better advantage than can Prof. Wickson, then he should have the place, for California pays for, and should have, the best; but we must admit that we question very much whether any man from the east can give as good service as can a Californian in this branch of University work. Prof. Wickson has been connected with the University for many years, he has done much original work, and is authority on all matters connected with agriculture and horticulture. He understands the peculiar climatic and soil conditions of the state, and is withal a gentleman who has won the respect of all with whom he has come in contact, all of which should fit him for continuing in the position he has so capably filled for several years. Eastern men are accustomed to eastern conditions; it takes a long time for them to fit their minds to the changed conditions offered in California, and it seems worse than folly to turn out a man whom we know to be capable to make place for one who may not be. But as the University is now conducted it is questionable whether a Californian has any chance, no matter how competent he may be.

GOOD FRUIT PROSPECTS.

Later reports from the fruit sections are now coming in and, as we have stated, they are much more favorable than those which came in earlier and the indications now are that there will be a fair to good crop of all deciduous fruits. Even apricots, which will be lighter than most fruits, are showing up well in some sections. Cherries will be a good crop and prunes better than for years. Every season we have heavy rains or frosts at or about the blooming period and the newspapers always predict a total failure which later developments never fail to falsify. In over thirty years' experience in California we have heard these reports as regularly as the season, and have never yet known a failure of the fruit crop. True, there have been varying seasons, some much better than others; there have been seasons of shortage in some varieties, but never yet a failure.

LITTLE PEACH BLIGHT.

Peach blight which was very prevalent last season, and which caused much alarm, as many feared that it would be to the peach what the pear blight is to the pear, has not appeared so destructive this year. This disease has been known in California ever since we have been growing peaches, and some seasons it has proven very destructive, while in others it has almost entirely disappeared. It appears to be affected by climatic conditions largely, and some seasons are very much more favorable for its development and distribution than others. Unlike the pear blight, which is of bacterial origin, the peach blight is a fungus, and will vary in virulence with the season. It is more easily controlled than the pear blight, as it is external and within easy reach of remedies, the Bordeaux mixture applied full strength and early in the season, being found effective. It may be years before it will prove as destructive again as it did last year, but at the same time it is wise to take all necessary precautions against it.

PEACH CURL LEAF.

Curl leaf of the peach has again appeared and very much inquiry is being made for a remedy for it. There is no remedy when the leaves have curled. They are past redemption, although the progress of the disease may be stayed by proper spraying. Effective work against curl leaf must be done while the trees are dormant, and all such as are subject to the disease should be treated with full strength Bordeaux mixture during the later winter months. This may be followed up with a lighter application of the remedy when the trees are in leaf, but the effective work must be done early.

VINE HOPPER DROWNED OUT.

It is an old saying that it is an ill wind that blows no good, and it now seems that the high waters around Lodi and Acampo, which are the great table grape centers of the state, were not wholly an unmixed evil. For many years these vineyards have been afflicted with the vine hopper, which has devoured the foliage and deteriorated the grapes in quality and lessened them in quantity. It is now reported that while the vines are rapidly recovering from their involuntary baptism, the hoppers which hibernate in the ground have been largely destroyed.

A GREAT YEAR.

The year just past has been a most eventful one for California, and in the face of the greatest disaster the world has ever known, there has been a progress throughout the state that might be classed as phenomenal. According to advices received from all parts of California, it has been a year of advancement surpassing any previous year. While millions of dollars were lost in the disaster which came to San Francisco and other cities, and an almost unprecedented flood swept over the great interior valley, the state's population has materially increased, and development of agricultural lands has proceeded at an unprecedented rate.

Last year's fruit crop of all kinds was one of the largest known in years, and the outlook for the coming season indicates that with two exceptions similar conditions will prevail. While thousands of settlers of all classes have been pouring into the state the extraordinary demand for labor is still unsatisfied, and immediate employment for both men and women, could be given tens of thousands in all lines.

FARM MEMORIES.

One morning I was awakened with a strange new boy in my mind. It came to me at that moment with indescribable poignancy, the thought of walking barefoot in cool, fresh furrows, as I had once done when a boy. So vividly the memory came to me—the high, airy world, as it was at that moment, and the boy I was, walking free in the furrows—that the weak tears filled my eyes, the first I had shed in many years. Then I thought of sitting in quiet thickets in old fence corners, the wood behind me rising still, cool, mysterious, and the fields in front stretching away in illimitable pleasantness. I thought of the good smell of cows at milking. You do not know if you do not know! I thought of the sights and sounds, the heat and sweat of the hayfields. I thought of a certain brook I knew when a boy that flowed among alders and wild parsnips, where I waded with a three-foot rod for trout. I thought of all these things as a man thinks of his first love. Oh, I craved the soil! I hungered and thirsted for the earth. I was greedy for growing things.—American Magazine.

Under certain conditions, especially when checked in its growth by drouth, etc., growing sorghum becomes poisonous through the formation of prussic acid in the leaves. Great care should be exercised in letting stock have access to it at such times.

As a forage, sorghum contains an excess of carbo hydrates, or fat formers, and is best fed in connection with materials containing protein, or the muscle-making elements. The same fact is true of the seed.—Prof. Charleton R. Ball in Farmers Bulletin 246.

There are said to be 37 ways of cooking a steak, and every woman seems to know all but 36 of them.

With the Citrus Growers

By J. W. MILLS

EASTERN GROWN ORANGES.

A GROWER recently asked us if we thought that new hardy oranges that grow north of Florida along the Atlantic coast, will have any influence on the market for California oranges. To this we emphatically answered no.

What they now have may perhaps make a cheap substitute for lemonade material. The originators of these new citrus fruits never claimed anything else for them. Even if they were better than the originators claimed them to be, they never would take the place of the California or Florida orange and perhaps would never satisfy a fraction of one per cent. of the people who use lemons. There need be no fear that these new products will influence the market for the citrus fruits that are now supplied. They will be valuable in a small way only to use as a beverage for a short time during the year. It would appear that the short season in which they must grow would bring them past the season when such fruit would be most in demand.

NAVELS REBUDDED.

There was a great scramble a couple of years back to bud everything within reason (and some without reason) to Valencias. Fine Washington navel trees were in some cases budded to this variety and it has proven to be a bad proposition. The Valencia does not make a good tree when budded onto Washington navels in a great many cases. We have yet to see a good Valencia orchard that is now in bearing that has been built on a navel grove. It would be fortunate for those who have navel groves, if this condition were universal and everybody knew it. There may be cases east of the coast orange region where it may pay even to get a moderately good Valencia orchard in this manner, but we doubt it. Near the coast where the Valencia does its best and the navel is not so good as further inland, such a procedure may be the proper thing, but even then we doubt it. A vigorous growth from the navel tree after it has reached maturity seems to be the exception.

If citrus growers would study the climatic conditions which serve the different varieties best, and if they are in that particular locality which produces a good Washington navel, they should stick to it, no matter what prices other varieties are bringing. The higher the price the other kind brings, the closer they should stick to their favorite orange. There will be enough new plantings to equalize the run of prices before many more years pass. It takes time and money to get an orange tree into bearing and if it is then cut off and changed into another variety, several years are lost and more expense added. What may be gained should prices of the "other" kind remain high, will in most cases be lost by loss of time and attendant expense.

PRUNING ORANGE BUDS.

Do not allow the two-year old buds that form the tops of old transformed trees to become long and unwieldy. We have seen two-year old Valencia buds on old stocks, that had a growth of four or five feet with a little fruit maturing which bent the tops clear over, giving the trees a sort of umbrella shape.

Lemon trees may be trained in that manner in order to secure the Baronio system, but it is not in acocrdance with latest and most approved method of pruning orange trees. Such a growth was occasioned by not pinching back the tips of the branches during the first summer's growth. This is important and should not be neglected even if there were no danger of wind blowing them out. They are a rank growth that needs to be made thick in the stock with the main part of the head of the tree close to the stock so that it will hold up a heavy load of fruit.

No women should be expected to work for a husband after marriage. She usually works hard enough trying to get him.

TWO METHODS.

Prof. Hury W. Crockett, assistant horticulturist, of the Agricultural College, Logan, Utah, thus compares the two most commonly adopted systems of irrigation:

Flooding.

By flooding is meant the running of the water over the entire surface of the soil to be irrigated. This system is deceptive in that the amount of water retained by the soil is much less than is expected on account of the rapid evaporation following. At best the water is unevenly distributed and bad effects resulting from insufficient moisture are obtained. Unless the soil is of such texture that vertical percolation is very rapid it is very likely that it will not become soaked to a depth to be of the most use to the tree, and as the roots will always seek the moisture the result is that they will all grow near the surface instead of going down to a greater depth where they would naturally require fewer irrigations and be better able to withstand drought.

Furrow System.

In the furrow system the water is run in small streams in furrows between the rows of trees, the number of furrows being regulated by the size and age of the trees.

This method of irrigation is most successful where the soil is of such nature that the water will soak and spread laterally rather than vertically. The furrows should be so close to each other that the soil will receive a thorough soaking which will, of course, leave a dry surface between furrows. By allowing small streams to run for many hours the soil becomes soaked to a greater depth and the water is distributed more evenly than by any other method. The roots in search of moisture go deeper into the soil where a great amount of plant food is to be found. Experience will soon determine the size of streams to use, the distance between the furrows and the length of time required for a thorough irrigation. While flooding may be a faster and cheaper way of irrigating, it will be readily seen that the results obtained by the furrow system are greater proportionately, as it reduces the labor of cultivation to a greater extent, distributes the water more evenly, does not allow the water to come in contact with the bark of the trees, and produces more healthy, deep-rooted, vigorous and long-lived trees.

THE USE OF CUTTINGS.

Lemons, citrons, and limes are sometimes propagated by cuttings. Oranges and pomelos may also be propagated in this way, but as they do not root readily this method is seldom used with these fruits. As in other cases, the cuttings are taken from young wood, the twigs being cut into sections from 4 to 6 inches in length, and usually with a portion of one or two leaves remaining attached to the upper end. The base of the cutting is prepared by a smooth, slanting cut made with a sharp knife (a smoothly cut surface forms roots much more readily than a roughly cut surface in which the tissue is injured). Cuttings thus prepared may be planted in any convenient-sized box filled with sand. The basal end of the cutting is inserted in the soil, leaving about 1 inch of the upper end exposed. Wherever bottom heat can be secured, rooting is greatly facilitated. When the cuttings have sprouted and have attained a height of 8 inches to 1 foot, they may be transplanted to the nursery, as in the case of seedlings.

There once was a soldier quite thin,
Whose tongue hung away from his chin.
When asked what was wrong
He gulped loud and long
And said he was just mustard in.

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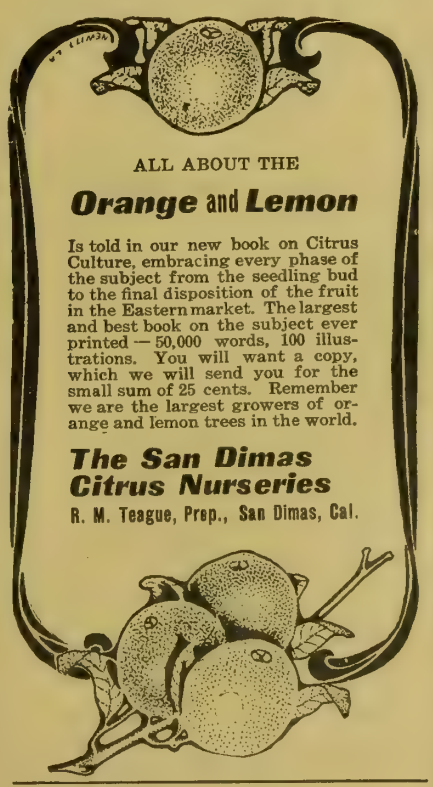

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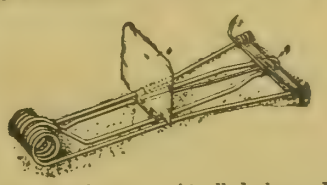

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PROF. WICKSON MAY RETIRE.

There has been a rumor current for a fortnight that Prof. Wickson, dean and acting director of the Agricultural College at Berkeley, is to retire at an early day.

It is to be hoped that this rumor is without foundation. Prof. Wickson has been so long and so intimately connected with the agricultural interests of California, that his retirement from active management of the agricultural interests of the College would be a little short of a calamity to the farmers of the state.

No less disquieting is the rumor that he is to be replaced by a man from the East. In the judgment of those well qualified to express an opinion, such a change cannot do other than work irreparable injury to the agricultural interests of California. No man from an eastern state can come to California with its entire change of climatic conditions, its soils, its methods of farming, and be of any value to the people for years to come. He may be a theoretical educator, he may understand general farming, as it pertains to eastern conditions, but he will not understand what is necessary to success in California. We trust, therefore, that Prof. Wickson will be allowed to remain at the head of the Agricultural College, where his influence for good is so wide and so lasting.

VALUE OF GOOD ROADS FOR HORSES.

The Department of Agriculture at Washington is lending its best efforts to promote the good roads movement in the United States. To this end a bulletin has just been prepared which is intended to show the value of good roads from the standpoint of either a breeder or user of horses. This bulletin shows that the total tonnage of farm products hauled on country roads in the United States is not known, but of twelve leading products it is estimated that nearly 50,000,000 tons were hauled from farms during the crop year 1905-06 at a cost of about $85,000,000, or more than five per cent. of their value at local markets. Of this traffic 40,000,000 tons represent the weight of corn, wheat and cotton, and the cost of hauling these three products was $70,000,000. The number of working days taken to haul twelve leading crops from farms to shipping points during the crop year 1905-06 is estimated at 21,417,500 and the number of loads taken as 30,319,000. The greatest time for any one crop in hauling to shipping points is 8,494,200 days for corn, but if the time taken for hauling to local mills the wheat consumed in the counties where grown be included, the total number of working days taken for hauling wheat from farms during the crop year just mentioned would be over 8,900,000. Although there were fewer loads of cotton than of oats, it required 1,000,000 more working days for men and teams to haul the fiber than this grain. The average time for a round trip for hauling oats being 0.6 day and for cotton one day. The greatest distance over which it will pay to haul a given crop will practically limit the production of that crop for the market. Beyond that limit a more valuable product must be made. Cotton is hauled a greater distance than wheat, and wool is hauled on an average more than three times as far as wheat and more than three times as far as cotton.

Live animals are often profitable substitutes for crops on lands remote from shipping points, for the animals may be driven at an expense far less than the cost of wagon transportation. The distance limit for profitable farming for a given crop may often be extended by improving the methods and means of hauling. Better wagons and horses may be used, roads may be improved and better facilities may be had for receiving the products at local markets and shipping points. Improvements of this kind tend to lessen the expense of hauling a load and thus make it profitable for farmers to haul from greater distances. From tables in the bulletin in question it is said that average loads of the same product weigh in some states twice as much as in others and consequently the expense of hauling is much less in the former states than in the latter for similar distances. The average distance from farm to shipping point for 21 of the 23 products treated in this report range from 7 to 12 miles. When these significant facts are taken into consideration one begins to recognize what the value of good roads will be when they shall have become general That it will require the expenditure of an almost incomprehensible sum of money to bring about that result is true, but that the bettered conditions will be worth the cost is beyond question.

CULTIVATE THE APPLE.

There is no fruit more universally liked, or more generally used, than the apple, and in addition to its health giving qualities, there is none more valuable for planting for commercial purposes, on account of its long market season and for its so-called secondary products.

By reason of the peculiar topography which gives to many portions of California the entire range of climate on the Atlantic coast from Maine to Florida, also gives us the advantage of having the apple as a dessert fruit every month of the year.

Everything about the apple can be utilized. If not used as dessert fruit, it can be cooked in many attractive and palatable forms, dried or made into beverages, butters, jellies or finally used as feed for stock, especially the sweet apple which is said to be excellent for fattening purposes. Even the cores and peelings, according to a recent circular from a United States Consul, are now wanted for shipment to Europe to be used for various purposes.

In fact there is no other product of the farm that so thoroughly fills the old German farmer's idea of a money maker. When asked how it was that he had risen from poverty to comparative wealth in such a short time, replied "that he had worked hard and produced many things on the farm which he took to market to sell; what he could not sell he brought back and fed to his pigs, and what his pigs could not eat, he himself ate."

There is a very general revival of interest throughout the fruit growing sections of the world, where apple culture is possible, in this industry, and much attention is being given to the introduction and testing of new varieties and to more thorough methods of cultivation. Extensive plantings are made in localities where in former years it was thought the apple could not be grown, for with improved means of transportation and of keeping, can be sent in good shape to all attractive markets of the globe. Even in old England large plantations are being made for commercial purposes, mainly to supply the increasing demand of the Englisn market. Rivers & Son, the eminent horticulturists of that country, are authority for the statement that orchards planted in apples upon land properly cleared, drained, trenched and fenced against game and stock, will pay a fair profit upon the capital invested and labor required to produce a crop, and will increase in profitable income for a number of years. There is no fruit tree that responds so faithfully and promptly to systematic and intelligent treatment. As an instance, one of the bad effects of neglect is the habit acquired by nearly all orchards of bearing an excessive crop one year and nothing, or next to nothing the following year. Mr. Pell, at one time the famous grower of the Newtown Pippin at Pelham, N. Y., more than thirty years ago, showed to the fruit growers of the country that by judicious but persistent thinning of the fruit each year and the use of fertilizers, it was possible to break up this habit of overbearing, and in his orchard of 2000 trees he succeeded in making them abandon the off year system and give him annually uniform crops of magnificent fruit.

What is needed in Southern California, and in fact in most portions of the state, is to more fully recognize the peculiarities of our climate, and that we have three zones in which the apple can be grown, viz., the Coast region; the interior valleys, lower foothills the upper foothills and mountain valleys and plateaus up to 3500 to 4000 feet.

These all require a careful selection of varieties and different treatment of the trees, especially in locations where irrigation is necessary.

The custom of planting the apple among citrus trees or of growing any crop that requires winter irrigation or cultivation should be discontinued.

PICKLING OLIVES

Continued from First Page

few treatments with pure water before being put finally into brine.

The first salting must be done very gradually and carefully, in order to prevent shrinkage and wrinkling of the fruit. For this reason, gradually increasing strengths of brine must be used, as described, and the olives left long enough in each to be thoroughly penetrated.

In these operations no sign of scum or slime should be allowed to accumulate on the olives, the vats or the covers. This is of especial importance during the treatment with plain water. On the first signs of sliminess around the sides of the vats, where it appears first, the latter should be emptied and thoroughly brushed and scalded before replacing the olives.

The best pickled olives are made without the use of lye, but this process is only practicable with olives such as Ascolano and Columbella, the tartness of which is easily extracted, and where the water is extremely pure and plentiful, and even then it is very slow and tedious. It differs from the last process only in omitting the preliminary lye treatment. The olives are placed from the beginning in pure water, which is changed twice a day until the bitterness is sufficiently extracted. This requires from forty to sixty days or more. The extraction is sometimes hastened by making two or three shallow, longitudinal slits in each olive; but this modification, besides requiring a large amount of expensive handling, renders the fruit peculiarly susceptible to bacterial decay and softening.

In a recent issue of the Cultivator appeared a road grader, known in the market as the New White City Grader, which is becoming popular because of its cheapness. It costs $125 delivered, can be worked on sandy ground with one team, and Mr. Schilling, the general agent says can be run where heavier graders will not do the work. We trust this grader will fill the want of much men and towns, and revolutionize road building in California.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

About a thousand acres of beets are planted in Chino.

Cabbage shipping from the Fullerton belt is now well under way.

The Imperial creamery is now making about three-quarters of a ton of butter a day.

On Thursday night a trainload of cattle were taken to Piru and put in pasture in the canyon.

James Irvine of the San Joaquin ranch shipped five carloads of fat cattle to Los Angeles Monday.

Fuller Bros. received this week a car of corn from Kansas. They also received one last week at Heber.

Reports from Imperial are to the effect that much vegetation has been destroyed by the cuts worms there.

Milking machines are being installed on the ranches of J. D. Huston, of Imperial and W. E. Wilsie, of El Centro.

If present favorable conditions continue, the amount of beets planted for the Chino factory will be 10,000 acres.

Southern growers are receiving $20 a ton net for cabbage and say there is good money in the industry at this price.

The first shipment of summer squash from the Imperial valley was made on April 22, and came from Brawley.

The registered Holstein-Friesian bull, Admiral Togo of Compton, was sold by J. M. Spencer to R. B. Harper, Downey.

The Escondido shipments for the week were 7050 dozen eggs, a ton of poultry, 40 cans of cream and 1257 pounds of butter.

Dried eggs are being handled for the market by a Santa Barbara man, F. A. Martin, one of the old-time residents of this city.

It is probable that considerable Indian or field corn will be raised at Brawley this season, the planting time coming about the first of August.

It is estimated that the total output for the season, including all varieties of oranges, lemons and grapefruit, will be close to 1500 cars.

Thus far this week six carloads of graded Holstein and Jersey cattle have arrived in the Imperial valley and have been placed on the ranches.

A twenty-five acre orange orchard, 15 acres in full bearing, and 10 acres in one-year old trees, has been sold to D. A. Kingsbury at Hemet for $17,000.

Summer squash promises to be a profitable crop on the desert and the shipments from Brawley alone will amount to nearly a carload the present season.

It is possible that another year will see shipments of cucumbers and squash from the Imperial valley sent to Chicago and other eastern points in carload lots.

Hemet is showing steady growth this season. About 1000 acres are being planted to fruit, 300 acres to walnuts, 200 to oranges, the balance to peaches and apricots.

Four carloads of cabbage were shipped from Anaheim today. The output has averaged a carload daily the past week. The shipments will be heavier in another week.

The experiment made some months ago of bringing shelled corn from Kansas to the Imperial valley with which to harden hogs and cattle before shipping them to the Los Angeles market is being followed up in a quite extensive way.

The ranchers about Arlington are meeting with more or less adversity this spring, especially those who have alfalfa, as the weather hindered and the rain spoiled to a great extent the first crop. Now the worm pest is here again.

F. H. Stanley reports that the Brawley cantaloupe crop is in splendid condition. He says the fields are being better cultivated than ever before, the growers having learned by experience how to care for them. The season is fully two weeks ahead of last year and the vines are well set.

HORTICULTURE.

In West Highlands the Citrus association has about 75 cars yet to ship.

The price of oranges is holding up well. The local price for a single box is now $2.

In the cities the cut worms are general feeders, and attack anything from flowers to fruit trees.

In East Highlands it is estimated that there are close to 130 cars yet to ship of navel oranges.

Parasites for the purple, red and black scales are at work in the orchards of Southern California.

James Waters of Colton recently sold his ten-acre lemon grove, south of the railroad there, for $10.000 cash.

The estimate of Riverside's total orange crop this year is 5000 cars. Of this amount 3000 cars, in round numbers, have been shipped.

Slowly the remaining navel oranges in the south are being moved. Too slow, as has characterized the fruit shipping industry the past two months.

Hot house cucumber vines in Southern California have been troubled with a powdery mildew. This is quite easily controlled by using Bordeaux mixture.

In sections of the Imperial valley during the last few days an army of worms has been busy, and quite a little damage has been done in spots to alfalfa and grape vines.

As the season advances, orange growers who still have navels and seedlings on their hands are growing apprehensive about the prospects of getting cars to move them.

E. A. Parrish, superintendent of the Wild Rose ranch in Temescal canyon, has set out 20,000 eucalyptus trees this year, in addition to a peach orchard, says the Corona Independent.

A rancher living between Colton and San Bernardino took in to the Horticultural Commission some specimens of oranges from his place that had been attacked by the army worms.

In the apple sections of the south power sprayers have been in use for ten days spraying for powdery mildew, and this will be followed by arsenical mixtures for the codling moth.

Rivera reports good prospects for a big walnut crop and good prices. Chino, too, will soon become a famous walnut section judging from the rapid increase of acreage in that direction.

The purple and red scale parasites which were brought to this state last winter by George Compere from China are being propagated in the orchards near San Diego, where the scale is the most troublesome.

The railroads are failing to make good their promises of plenty of cars, and the feeling is growing among Riverside and Redlands orange men that they have been discriminated against in the allotment of cars.

The fruit raisers of Tustin are determined to make an effort to protect their orchards from the general public who it seems has concluded that it is perfectly right and proper to go into orchards and carry away fruit at will.

The shipments of oranges and lemons from Highland, East Highlands and West Highlands to date totals 1210 cars, of which Highland shipped 559 cars, the western end of the township 250 and East Highlands the remainder.

The Westfall Fruit Company reports the sale of a part of a car of navels in New York on April 19 for $5 per box, the record price of the season. The fruit was shipped by W. F. Whittier, who is largely interested in Hemet, from his grove at Redlands Junction.

Cut worms are very much in evidence in San Bernardino again and in some portions of the valley they are again attacking the orange trees, eating into the ripe fruit where it is still on the trees; but the worst damage is to the young fruit just setting and to the foliage.

Northern California

AGRICULTURE.

Plans are on foot for the building of a beet sugar factory by Los Angeles capitalists at Corcoran.

A Kings county farmer sold some hogs in the open market Friday that brought him $34 each.

Within the past year several carloads of horses and mules have been shipped from the Wheatland section.

From Anderson last year there were shipped by rail points agricultural products and stock valued at $800,000.

Crops of all kinds in Solano county are looking well. Hay promises to yield well and grain will average a good half crop.

A movement is under way to organize a reclamation and drainage district which will include the greater portion of Sutter county.

Hay was bringing a fancy price at the Hollister warehouses this week. One particularly fancy lot sold for $26 per ton on the cars.

J. M. Daggs of Hanford sold three Duroc hogs Friday at 7 1-4 cents a pound. The three weighed 1465 pounds and brought $102.43.

The agricultural, horticultural and stock-raising sections of Shasta county are rapidly forcing their way to the front. A few years ago all was mining.

Frank H. Burke sold to H. S. Hersman, San Martin, the two registered Holstein-Friesian cows, Frolis of La Siesta and Donzella of La Siesta.

J. H. Williams has sold the registered Holstein bull, Sir Josephine Thorn, to Jas. M. Wann, Porterville; and Sir La Reina Josephine, to H. S. Halsel, Porterville.

The fruit-growers of the Suisun valley are considerably exercised over the labor problem and men who want work in the orchards will be welcomed to this valley.

About thirty chicken raisers, owning in the aggregate about 9000 chickens, attended the meeting of the Poultry Raisers' Association in Santa Cruz Saturday morning.

The farmers will hail the advent of warm weather with delight, as it helps to cure the first crop of foxtail and alfalfa hay, which is now being cut. —Hanford Sentinel.

An irrigation company desires to submit to the property owners within the confines of Tulare lake a proposition for the drainage of said lake for a period of 50 years.

The deliveries of beets from the Pajaro valley will probably be completed this week, but it is impossible at this time to say when the deliveries will be closed from the Salinas valley, or when the factory will close down for a general clean up.

There will be a good crop of all varieties of fruit in Solano county. Pears have set well and the prune trees are loaded again this year. As a general average the peach crop will be splendid. Clings were cut by the rain at time of their blooming, but the other varieties more than offset their shyness.

HORTICULTURE.

Lindsay is beginning early to plan for the next citrus fair.

The olive trees of Kings county are simply loaded down with fruit.

A successful traction engine has been built and is now running in the orchards around Winters.

The Chico fruit plant is preparing for extensive business during the coming drying and packing season.

Early apples in the eastern part of the Pajaro valley will not make much of a showing even with continued sunshine.

A big lot of lumber is already on the site for the big new winery at Armona and the structure will soon commence to arise from the ground.

Of the Solano county fruit, almonds and apricots are almost a total failure, but cherries, peaches, pears, plums and prunes will produce a fair crop.

The big cannery associations have had their representatives in the northern field this week, and a few sales of apricots at $60 are reported.

The first run of the Marysville cannery will be on plums and peaches, and if the crops are up to expectation the run this season will be a record breaker.

The first batch of beneficial insects that will be sent out from the state hatchery by the Horticultural Commission will be the parasite of the brown apricot scale.

A tour of inspection through a portion of the Pajaro valley developed that the Bellefluer apple outlook is excellent, the trees being heavy with well set blossoms.

A grower of winesaps near Watsonville states that scab is in evidence and doing some damage. Newtowns promise better than a fair crop and other varieties fair.

T. J. Brundage of Farmersville recently as an experiment planted several pomegranate trees on a piece of black alkali land and the trees are not only growing but doing well.

Farmers around Knights Landing are greatly discouraged over the crop prospect. A very small acreage of grain was sown owing to the continued rains, and the greater part of it was sown very late.

The vineyards around Hanford are putting out new shoots and a fine crop of raisins is in prospect. Many buyers are in the market but not many crops are being sold, even at the prevailing high prices.

The work of cultivating the Tulare county vineyards is progressing, the weather being favorable for drying the ground, which has been very wet this season, and the work of cultivation greatly retarded.

Since the danger point for fruit from frost is about passed, it is safe to predict the outlook around Woodland is promising. There will be a good yield of peaches and pears. Prunes are also well set, but it is most too early in the season to tell what the yield will be. The indications, however, are that there will be a good crop.

WHITE MINORCAS

Won at Alameda Poultry Association Show, 1907: 1st Cock, 1st Hen, 1st Pullet

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A Few Hens For Sale to make room. Prices on application to

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PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

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Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Haphazard feeding is no longer profitable. Try Midland Food and be convinced.

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The acknowledged standards of perfection. All poultry men who have used these machines have supreme confidence in their ability to hatch and breed. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for the greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. Filcher, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clork Exposition."

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Mitchell's White Leghorns

Exclusively

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Circular for the Asking — (Altadena Cars)

Large Chicks—

As well as little ones, eat *A. C. W.* It is so compounded that an 8-weeks chick will thrive as well on this splendid food as the little one-day-old fellows.

The question of ***proper, rational*** feeding of chicks, old or young, is solved by the A. C. W. The very best food for ***amateurs*** to use for their flocks—it can do no harm. No bowel trouble—no over-eating—if you feed A. C. W. Chick Food, put up only in sealed sacks, by

EGG FOOD ACW IT FILLS THE BILL

The Agricultural Chemical Works

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Chicks Just Hatched

We ship them everywhere. Pure Bred White Leghorn Chicks from the Best Egg Producers in the United States

California Incubator Co., Maxwell, May 27, 1906.

Gentlemen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come so far and being so long on the way without the loss of a single one, but it is an undisputed fact that such was the case. We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. Campbell.

CALIFORNIA INCUBATOR CO., 907 Washington St., Petaluma, Cal.

Beef, Blood and Bone Will Make Your Hens Lay

This is not a medicine but a high grade nitrogenous food. Write for free booklet, "How to make Hens Lay." Our Poultry Foods are sold by all local dealers and manufactured solely by

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Bemis Plymouth Rocks

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Prizes Won at Alameda County Poultry Association Show, Oakland, 1907—22 Regular Prizes and 3 Silver Cups. Can furnish best birds and eggs at reasonable prices. No incubators lots furnished

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Altadena Buff Orpingtons

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You can win with my stock and eggs because I have won and am winning. Matings this year very fine. Inspection invited. Write me your wants. **Eggs $2, $3 and $5 per 15.**

Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

HELPING A NOVICE.

A CHAT with my sisters in the poultry yard this week about a beginning in the chicken business may prove interesting to some of the older raisers and helpful to novices.

A Voyage of Discovery.

I often wish I were a beginner, as I remember the enjoyment of seeing the little chicks hatch under their mothers, and watching my grandmother's cook float the eggs, two days before hatching time to see which eggs contained a live, healthy and "kicking" chick. How those eggs used to bob about on the warm water, and then they were carefully replaced under the wrathful hen who scolded loudly at being disturbed so ruthlessly.

There was such delight in watching the "biddies" with their broods and learning the dispositions and characters of the different hens, for the character of hens varies as much as the character of each individual human being; some are cross, others kind and gentle like doves, some are nervous and restless, others lazy and indifferent; some good, affectionate mothers clucking to and feeding their chicks and never losing one; others cross and spiteful, treading on the chicks and fighting with their neighbors. There is a difference in the disposition of hens and of human beings.

Helping the Novice.

"Will you come and help me to lay out my chicken yards?" wrote a young and beautiful girl last week, "for I want to make a success of the chicken business and it will be easier to do so if I begin right."

I often go to ranches to mate up the fowls, or to select the best breeders or investigate trouble of some sort, as well as to plan yards and hen houses and organize the operation of different plants, and I was glad to be able to go into the country to help my unknown friend.

It was one of our loveliest days and the site one of California's choicest and most beautiful locations at the foot of the Sierra Madre mountains. The soil a "dessicated granite," a rich, gravelly loam full of tiny grit that would never pack hard but would give excellent drainage, supply the hens with grit and keep their feet and shanks in good condition, as I explained to my new friend.

Soil of this kind plays a very important part in the health of fowls and if you have healthy fowls your venture will be more than likely to pay. An ample supply of the purest mountain water was also a recommendation, for pure water and good air are quite as necessary for fowls as for human beings. Soil, water and air good, and plenty of fruit trees for shade. "You have an ideal location for a poultry ranch!" was my exclamation.

Planning the Yards.

The yards we planned should be about twenty-five feet broad by about seventy-five long, each to contain at least two trees for shade for the fowls and each a faucet of water. The trees appear to be about eight years old and spread enough to give shade, but are not too thick; there will be plenty of sunshine also.

The henneries are to be double houses on the dividing line of the fence so that it can be used either as one large house or two small ones, and opening into either or both yards. The land lies on a gentle slope, and one might be tempted to have a wooden trough of water, kept always running through all the yards, but I knew a man who had three thousand hens and who was forced out of the poultry business in California by such an arrangement. He bought some new pullets and although he had never had roup on his place these pullets brought it in and the running water carried it through all his pens and it resulted in his having to go out of the business entirely.

No one who has not been in the business knows how it lightens the work to have the water piped into the pens. It is quite hard for a woman to carry a bucket of water to a number of pens, besides having the water in each yard the trees can be easily watered and even the yards themselves. I found in some places where the soil baked, that by having the water arranged so that the yards could be irrigated, that the soil could be turned over or ploughed even in the heat of summer, and so kept healthy and clean.

A Good Start.

My new friend had been ordered to lead an outdoor life, and loving chickens and all young things was making this venture as a health restorer as well as an investment, and I have but little doubt of her success in both respects.

Her next request was to come out and see the hens that were sitting. She had them nicely arranged in good sized coops or nests with rainproof tops or small roofs, and an opening so that the hens could come off to eat, drink and dust themselves. I told her that she should have a can with a perforated lid like a pepper pot and once a week she should stroke the hen down the back, which will make her spread her feathers to show her anger, and whilst the feathers are standing out she must pepper the insect powder well into them.

Then I asked her if she had tested the eggs, she replied that she did not know how to do so. Egg testers are sold at all of the poultry supply houses,

White Wyandottes

These are pure white, hardy, fine layers, carefully selected. Eggs $1.50 per setting.

Buff Cochins

Simply unexcelled as to shape, color and feathering. More prizes won than by any other western flock.

Special Mating, eggs $5, Others $2

Nothing but the very finest. Several fine cockerels, $5 each. Write for full description of them.

Harry McIntire, San Diego, Cal.

Runt-Homer, and Hen Pigeons

Spargur's Trap-Nested
White Leghorns

Eggs from 200-Egg Hens, $1.50 per 15, $6.00 per 100
From Second Best Pens, $1.00 per 15, $5.00 per 100
Indian Runner Duck Eggs $1.00 per 13, $5.00 per 100
Blue Andalusian Eggs, $2.00 per 15, prize winning birds

H. G. Spargur - Soquel, Cal.

1907 LOS ANGELES 1907

We won on White Rocks, Barred Rocks, White Wyandottes, Buff Leghorns, White Crested Black Polish.

EGGS FOR SALE. SEND FOR CIRCULAR.

Golden Crest Poultry Ranch.

Box 412 — Santa Ana, Cal.

COLUMBIAN WYANDOTTES

Only $1.50 per Setting

From birds that won ALL the FIRST and SPECIAL PRIZES at San Jose. $8.00 per 100. Stock for sale.

R. Walker Mantz, Rural 21, San Jose, Cal.

S.C. White Leghorn Eggs for hatching $5.00 per 100. Large birds.
Good Laying Strain
Take Redondo car via Gardena to Strawberry Park
Stanley Senter, Gardena, Cal.

WHITE, BUFF COLUMBIAN WYANDOTTES
And Golden Sebright Bantams, prize winners
Stock and Eggs in season
M. E. Dillingham, Box 67 San Gabriel, Cal

MY EXHIBIT OF
WHITE, BUFF AND PARTRIDGE Wyandottes
Won 26 Ribbons and Special Prizes at the Poultry Breeders' Show. 1907
R. D. Box D87 **L. E. BERKEY,** Fullerton, Cal.

Santa Ana Poultry Ranch

LINE BRED

WHITE PLYMOUTH ROCKS

EXCLUSIVELY

We won as follows at the Poultry Breeders' Society Show: 1st Cock, 1st, 2nd, 3rd and 4th Hens, 2nd and 3rd Cockerels, 4th and 5th Pullets and 2 Silver Cups.

Some Extra Choice Cockerels For Sale. Eggs, $2.50 per 15, $10 per 100.

RHODA E. DURFEE

1110 W. First St., Santa Ana, Cal.

SILVER LACED WYANDOTTES

At the recent Poultry Breeder's Show we won eight ribbons on eight entries. "The best quality seen here for years, 1st cockerel has the best marked wing we have seen." —Pacific Fancier.
Eggs $1.50 per 15.

WHITE PLYMOUTH ROCKS

Grand laying strain, large vigorous stock, eggs especially recommended for incubator hatching, $1.00 per 15, $5.00 per 100, special mating $1.50 per 15.

FAIRVIEW POULTRY YARDS

A. E Nelson, El Monte, Cal.

Eggs for Hatching

Thoroughbred White Rock eggs for hatching at $1.50 for 15, $6 per hundred.
Mammoth Bronze Turkey eggs, 20 cents each. Also a dozen choice W. R. cockerels and baby chicks.

Jennie R. Frater Charter Oak, Cal.
Home Phone 2179

O. K. Trap Nests Shows the hen that lays the eggs and keeps her from eating or breaking it after it is laid.

O. K. Feeder Just the thing for your Scratch Shed. Send for circular explaining its workings.

C. B. Williams
Box B Ontario, Cal

COLUMBIAN WYANDOTTES

Winners at Breeders' Great Show, 1907. 21 prizes on an entry of 26 birds. Stock for sale, also eggs $3 and $5 per setting of 15; $20 per 100.

Ed. M. Burnell, South Pasadena, Cal.

Ross & Tate, Altadena, California

Breeders and Importers of

Buff, Black, and White Orpingtons

Have for sale Trios, Cockerels and Pullets. Eggs for hatching, settings or hundreds. Write or call.

Two Blocks North, One Block East Altadena Post Office

C. J. Ferris

BREEDER OF THE FAMOUS

Buff Plymouth Rocks

Winners of Five Prizes at the late Los Angeles show, the largest show ever held on the coast. A few choice cockerels for sale. Eggs, $2 and $3 per 13. Write your wants.

San Gabriel, California

East San Gabriel Egg Ranch

S. C. WHITE LEGHORNS
BARRED P. ROCKS

Eggs for hatching $1 per 13 $5 per 100 We breed from two year old hens, and the best ones of the flock only. No stock for sale. Ranch two blocks south San Gabriel car line.

Swanson & Johnson *San Gabriel, Cal.*

BARRED ROCKS

EXCLUSIVELY

Send for Sixteen-Page 1906 Catalogue

H. R. CAMPBELL
BOX O PETALUMA, CAL.

S. C. WHITE LEGHORNS

Eggs $1 and $1.25 per 15, $4 and $5 per 100. New stock of the Richland 200-egg strain.

C. C. Hockabout, Watsonville, Cal

SHADE'S RHODE ISLAND REDS

The World's best layers.
Write for Folder.

J. W. Shade San Bernardino, Cal.

Buff Plymouth Rocks

A few fine cockerels $2.00 each, Eggs $2.00 for 15 Very choice Eastern stock.

R. F. D. 1 F. W. Tutin, Riverside Cal.

BUFF WYANDOTTES

None Better for Beauty and Utility

In hot competition at Breeders' L. A. Show took more prizes than all my competitors combined.

O. S. Hofmann, San Jacinto, Cal

but not having one I rolled up a poultry magazine, tied a string around it to prevent it unrolling and using it like an old fashioned telescope, I placed an egg at one end and my eye at the other, and tried to look through the egg, most of the eggs were fertile and these appeared as if three-fourths filled with ink, but in one of the eight nests all the eggs were perfectly clear.

These eggs were from her favorite hen and she was much disappointed when I told her that there were no chickens in them. I broke one to show her that there was nothing but "egg" inside it and that the only thing she could do was to boil those eggs for her other little chickens. It occasionally happens, that a hen will lay only infertile eggs. Sometimes by mating her to another male bird or changing to several there may be found one that will give fertility, but occasionally there are hens that never lay a fertile egg. I have had two, one of them I bought to bring in new blood, she laid every day in one month for she was a good layer but I never found a fertile egg; she was a very high-priced bird but of no use for a breeder.

Hen or Incubator.

Then up came the question as to which would be the best, to begin with hens or with an incubator.

An incubator she must have later in the season or I should say at the beginning of next season, for hatching time for a novice is nearly over and she will have better "luck" at this time of the year in bringing her chicks up with hens, in those nice yards under the shade of the trees, than in a brooder, and also being a novice she can study her hens, learn the way they mother the chicks and be ready next fall and winter when the hens do not want to sit to "mother" her incubator chicks in the brooder.

She will have learnt by watching the hens, to understand the baby chicks, differents cries and notes and will know their wants and wishes as if by instinct. So I advised her to wait a little before investing in an incubator. "How many brooders should I have, will one be enough for one incubator?" she asked. As she intends to get a 200-egg incubator I told her that when I was operating only two incubators I found that I needed twelve brooders and that she should have from four to six, and I explained why the crowding injured the chicks and stunted their growth and killed so many. It is better to have plenty of brooder room; it pays to bring up the chicks right.

Supply of Green Food.

"What shall I do for green food? Had I better have a small alfalfa patch as well as the lawn?"

Nothing is better than green alfalfa for the hens and chicks, but as you have not commenced to plant one you will not have it ready for this early summer, so I advise you to plant one patch of kale; this grows quickly and by taking off the outside leaves it will keep on growing until it is higher than your head. The hens are exceedingly fond of kale; kale is a species of cabbage. They also like "Swiss Chard"—this is a sort of beet—and a patch of this would make a good change with the kale. "How large should these patches be?"

That would depend upon the number of hens; with twenty-five to thirty each patch might be about twenty feet square. I would also plant some lettuce for the little chicks; it is very nice for them and you could use some of it in the house.

I found that by planting a few boxes like the florist's seed boxes, with lettuce, that the brooder chicks were made very happy on stormy days when they could not go out. They did enjoy pulling up and eating the little lettuce plants, I suppose they thought they were in mischief and it really kept them out of mischief. Little brooder chicks get naughty and learn bad habits if they are not kept busy. I have a letter before me now telling of some chicks that are perfect little cannibals; they tear each others insides out. This comes from their not having to work, so I try to keep mine busy and happy.

Chas. E. Smith Breeder of *Arrowhead Strain* of

Barred Plymouth Rocks

Won at Los Angeles Show, the largest ever held on the Coast, 225 Barred Rocks in class, as follows: 1st, 2nd and 5th Pens; 1st, 3rd, 4th and 5th Hens; 1st, 2nd 3rd and 4th Pullets; 2nd Cockerel. Barred Rock Club Cup for Best Display; Association Cup for Best Display, and Three Incubators, one for Best Pen in Show, all breeds competing.

Choice Stock for sale from same mating that I bred my prize winners from. Prices reasonable. Eggs, *$3* and *$5 per 15.*

Chas. E. Smith, Gardena, Cal.

Take San Pedro electric cars via Gardena to Smith's Crossing.

McCullough Poultry Farm

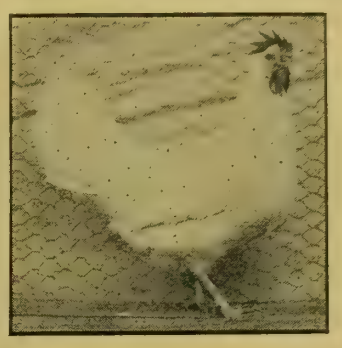
OFFERS THE BEST IN

Barred Rocks

OUR BIRDS WON as follows: Second and 5th cock, 4th cockerel, 2d, 3d and 5th hen, 1st, 4th and 5th pullet, 1st and 2d pen, and several specials. Our birds are line-bred, and are excellent breeders as well as show birds. We have sixteen pens mated up from which you can select eggs. Eggs from regular matings $2 and $3 for 13; from special matings $7 for 13.

CORRESPONDENCE INVITED

H. T. McCullough, Mgr., Box A171, West White Oak Ave., Monrovia, Cal.



Maud S, 1st Prize Hen, San Jose
Bred and Raised on My Ranch

Baldwin's White Leghorns

Baldwin's Leghorns are all right in blood lines and for heavy laying right straight through the year they are unexcelled. I breed nothing but White Leghorns and make them a study, aiming at quality and market value combined.

My yards are modern in every respect and I invite inspection. Think of us when you think of White Leghorns.

My best pens are made up of stock from the first prize winners at the great show at Madison Square Garden, New York, 1905 and '06.

All stock sold on a guarantee to be as represented.

Eggs, $1.50, $2.00, $3.00 and $5.00 per setting (15). Incubator lots, $6.00 and $10.00 per 100. My $6.00 eggs are from selected yards. My $10.00 eggs are from especially selected matings of my finest birds.

Send for catalogue giving full description and prices of my matings and show records.

Frank E. Baldwin *The White Leghorn Specialist*

Phone Suburban 82 46 Washington Ave., San Jose, Cal.

200-250 Egg Fowls | **WHITE WYANDOTTES** | Always Win

Grand Opportunity

At HALF PRICE, our $15.00 and $20.00 per 100 eggs, also our $3.00 and $5.00 Matings at HALF PRICE.

Order Now. Fine Breeders Half Price.
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CAPITOL AVENUE POULTRY FARM

A. L. R. MANTZ *Rural 21, Box 98k* *SAN JOSE, CAL.*

Mission View Poultry Ranch

White Wyandottes That Are Trap-Nested

Prize Winning, Large Egg Laying Strain. Won Nineteen Prizes in 1906!

Mammoth Bronze Turkeys Lakenvelders
Silver Laced Wyandottes

Mrs. C. D. Hubbard Box 282 San Fernando, Cal.

Starbuck's Barred Plymouth Rocks

We Trap-Nest Our Hens. Bird Laying Qualities are inherited. Why set from poor layers? We use pedigreed cockerels whose mothers have for over six generations laid over 200 eggs per year. Eggs from old hens, $1.50 and $2.00 per setting of fifteen; from pullets $1.00 per setting of 15. No sales or visitors Sundays.

Wm. Starbuck - Fullerton, Cal.

The White Faced Black Spanish

Are famous as layers of large white eggs at all seasons of the year. We won all prizes at the Breeders Great Show, 1907. Choice Cockerels For Sale, $5. Eggs, $1.50 per 13, $4 50 per 50, $8 per 100. Special matings, $3 per 13. Fertility guaranteed.

Mrs. W. H. O'Connor Lock Box 112, Dolgeville, Cal.

8 Varieties of Wyandottes

Each Bred on Separate Farms. Quality Best. Eggs and Stock guaranteed. For particulars write for catalogue.

Queen Poultry Co. **Box 2, Los Angeles, Cal.**

White Wyandottes Exclusively

I have purchased the entire flock and good will of the

UNIQUE POULTRY FARM

have carefully selected the best of this flock, which in connection with my own gives me the best lot of birds on the coast. If you want eggs from prize winners that will produce prize winners— write me. Eggs $2, $3, $5. Incubator eggs as gathered from yards $6 per 100. Special matings, $10 per 100.

W A. SEYMOUR 470 N. Beaudry Ave. Los Angeles, Cal.

PEERLESS CHICK FEED

RAISES THE CHICKS

AND IS GUARANTEED PURE AND CLEAN

EVERY SUCCESSFUL POULTRY BREEDER USES PEERLESS

1907 LOS ANGELES

PEERLESS **INCUBATORS** MANDY LEE

1907 "MODEL"

MADE BY CHAS. A. CYPHERS

MELON VINES DUSTED WITH DEVIL'S DUST Will grow Faster and stronger. It is guaranteed to kill Aphis that strip the vines of foliage

6 LARGE CANS DEVIL'S DUST $5. Plenty to kill the Aphis on 3 acres

DEVIL'S DUST will make the vines produce **More Good Fruit**

315 S. MAIN **HENRY ALBERS CO.** LOS ANGELES

Beef Scraps

GUARANTEED ANALYSIS :

Protein.....65%

Fat.....8%

Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

Raw Bone

GUARANTEED ANALYSIS :

Protein.....25%

Phosphates.....45%

Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods

WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

Excelsior Mills

Excelsior Chick Food

Excelsior chick food is a perfectly balanced ration for your growing chicks. Will raise the largest possible per cent. of your baby chicks. All pure food, no shriveled grain and filler used in its manufacture. Absolutely clean and free from dust. No waste

The Best Food on the Market

Ask for Excelsior. If your dealer cannot supply you write us. Circular free if you mention the Cultivator.

Del Monte Milling Co., 242 Central Ave., Los Angeles, Cal.

The Featherly Farm Orpingtons

Prices Reduced One-Half For the balance of the season we will sell eggs from our 12 prize matings of Buff, Black and White Orpingtons, at half price. Prices now $2, $3 and $4 per setting, guaranteed. Order from this or from our catalog. Bargains in breeding stock to close our yards for the summer. Remember, we are the largest breeders of prize winning Orpingtons in the West.

P. L. Harley, Box C, Redlands, Cal.

Black Minorcas Exclusively

Our Minorcas excel in size and egg production. All prizes at the late Los Angeles Show were awarded our birds. Stock and eggs for sale. Send for our new illustrated catalogue.

Perham & Wheeler, R. F. D. No. 123, Lordsburg, Cal.

Chamberlain's Perfect Chick Feed

World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This is the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

NOTHING JUST AS GOOD.

GERMAIN SEED CO.,

Pacific Coast Agents. **LOS ANGELES, CALA.**

SPECIAL PRICES ON TON LOTS.

CARE OF CHICKS.

Our little chicks all come from the incubator, so that will have to be my start. When the machine begins to hatch we close it up and watch and listen to the "cheep, cheep" of the little ones.

The door is only opened to see about the temperature. In about twenty-four hours we open the doors and take out the little downy babies, placing them in the boxes, fifty to a box, and cover with a woolen cloth, setting in a quiet, warm place for another twenty-four hours.

Then comes the first feed. We place the little babies in a large box that has a good newspaper carpet, leaving some little shallow water cups in it. We feed some hard boiled egg, shell and all, mashed together with some millet seed and cracked or rolled oats. Just a little of this feed, for they are babies and are soon put back in their own box that has a good newspaper carpet. Newspapers are so plentiful and convenient, one can change and burn the old papers often. We keep the little babies this way for several days, till they begin to be lively, then they are transferred to their yard in the back yard.

Their coops are roomy, floored to keep out rats and other lovers of baby chicks. Before putting them in they are cleaned well and given a good airing. We use Beaumont oil a good deal with coops and houses, but too much must not be used or it will blind the little chicks. Carbolic acid is good, too.

The chicks' yard is made my standing twelve-inch boards on the side. This keeps them in until they are old enough to run abroad, and shields them from the cool spring winds. In the middle of their yard they have their feeder—four posts, driven into the ground, and covered top and sides with mesh wire, the meshes being large enough to let the chicks pass in and out till they are six weeks old. The coops are cleaned thoroughly every week as long as the chicks are there.

Our feed is all dry—millet seed, cracked corn and wheat—till they are large enough to take the whole grain. We feed all they will eat, and supply good, fresh water. The water is in iron drinking dishes, and is given fresh three times daily in hot weather.

The chicks grow like weeds. In two weeks they are over their yard fences and wander at will over the yard. As they get older they go farther. When they are small we feed them three times a day, but from two weeks old we only feed them twice a day, putting plenty in the feeder, and they can go to it when they please.

As soon as our chicks are well feathered out, we like to put them in their house. We think they are easier to move then, and they need more room. We separate the cockerels from the pullets, and keep them in a separate pen, but all the laying stock and young chicks have unlimited range and clean quarters. So far we have had very little disease. Sometimes a few of the little early chicks will droop and die from chill, but cleanliness and plenty of feed will raise the most of them. We have very little dew in the mornings, but when there is, we hold the little ones in the coop awhile. Generally they are out very early. Chicks want to be out as early as possible. They are ideal rustlers.—Commercial Poultry.

What was it Franklin said? "If you'd have a thing well done———'" "Tell your cook you'd like it rare," interrupted Subbubs.

Malthoid Roofing

is 32 inches wide and one roll will cover 200 square feet. It is easier to put on than laying a carpet. Makes a durable and lasting roof, absolutely impervious to heat or cold.

Write for booklets.

The Paraffine Paint Co.

Manufacturers of

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P & B Products

Los Angeles Office

313 North Los Angeles Street

"The Hens That Pay Are the Hens That Lay"

Son of Togo and Louie, World's Champions

the year around, as ours do. "The most famous White Leghorns in the world," won first prize at Buffalo, N. Y. and at St. Louis World's Fairs; also at Madison Square, New York, winning all specials and medals for best hen, purest records best head, best hen in the show; have records of 185-193 to 229 eggs in nine to twelve months; large size and unequaled as layers. Eggs for setting. Improve your flock with one of our beautiful large white cockerels or hens; bred by trap nesting continuously for several years from World's champions for great egg production. Write for best trap nest made.

W. W. Howard

San Jacinto, Riverside County, Cal.

White Leghorns

WHY PAY more when you can get Eggs from Selected Pens of a Heavy-Laying Strain for $1 per 15; $1.80 per 30; $2.50 per 50; and $4.75 per 100?

Arthur E. St. Clair Lordsburg, Cal.

Black Orpingtons

Single or Trios

Will sell out at a bargain. Twenty-five head from prize winning stock. Cockerels, Pullets and Hens. Prices.

Del Paso Poultry Yards

Beaumont, Cal.

GEORGE W. POPPELWELL

Successor to C. H. Robbins

Breeder of White Leghorns, Black Minorcas and Barred Plymouth Rocks. Eggs for hatching, $2 to $5 per setting. Single birds, trios and breeding pens a specialty.

Yards at Ranch (10) Phone Main 1583

943 W. Fremont St., W. Stockton, Cal.

White Rocks and Black Minorcas

They are beautiful birds; Rocks as white as snow, Minorcas black as a crow. Cocks from W. M. Humphrey's and Harry E. Rose's yards. Eggs for sale. Best pen, $1.50 per setting of 15, or $7.00 per hundred. Second best, $1.00 per setting of 15, or $5.00 per hundred.

Chas. S. Hunt, El Monte, Cal.

Prize Winning White P. Rocks

Won 1st on cock, 1st on pullet, special for best pair, Petaluma Incubator for best pair in American class at Los Angeles show, 1907, the largest ever held west of Chicago. Stock and eggs for sale.

AMELIA W. SLY

"Oakhurst" R. D. 1 Hollywood, Cal

SET Incubators and Hens with Eggs from good, healthy, farm-raised

White Minorca and White Wyandotte Stock

S. W. MORGAN, Sunnyside, California, has such Price $1.50 setting, $7 per 100

ALCOHOL AND GASOLINE.

Farmers' Bulletin No. 277 of the United States Department of Agriculture is on the use of alcohol and gasoline in farm engines. After describing the use of both substances, the following conclusions are reached:

The conclusions regarding the use of alcohol as fuel for engines as compared with gasoline are based on the preliminary results of the department's experiments and investigations, and upon the general knowledge of the authors:

First—Any engine on the American market today operating with gasoline or kerosene can operate with alcohol fuel without any structural change with the proper manipulation

Second—Alcohol contains approximately 0.6 heating value of gasoline by weight, and in the department's experiments a small engine required 1.8 times as much alcohol as gasoline per horsepower hour. This corresponds very closely with the relative heating value of the fuels, indicating practically the same thermal efficiency with the two when vaporization is complete.

Third—In some cases carburetters designed for gasoline do not vaporize all the alcohol supplied, and in such cases the excess of alcohol consumed is greater than indicated above.

Fourth—The absolute excess of alcohol consumed over gasoline or kerosene will be reduced by such changes as will increase the thermal efficiency of the engine.

Fifth—The thermal efficiency of these engines can be improved when they are to be operated by alcohol, first by altering the construction of the carburettes to accomplish complete vaporization, and second, by increasing the compression very materially.

Sixth—An engine designed for gasoline or kerosene can, without any material alterations to adapt it to alcohol, give about 10 per cent. more power than when operated with gasoline or kerosene, but this increase is at the expense of a greater consumption of fuel. By alterations designed to adapt the engine to the new fuel, this excess of power may be increased to about 20 per cent.

Seventh—Because of increased output without corresponding increase in size, alcohol engines should sell for less per horsepower than gasoline or kerosene engines of the same class.

Eighth—The different designs of gasoline or kerosene engines are not equally well adapted to the burning of alcohol, though all may burn it with a fair degree of success.

Ninth—Storage of alcohol and its use in engines is much less dangerous than that of gasoline, as well as being decidedly more pleasant.

Tenth—The exhaust from an alcohol engine is less likely to be offensive than the exhaust from a gasoline or kerosene engine, although there will be some odor, due to lubricating oil and imperfect combustion, if the engine is not skilfully operated.

Eleventh—It requires no more skill to operate an alcohol engine than one intended for gasoline or kerosene.

Twelfth—There is no reason to suppose that the cost of repairs and lubrication will be any greater for an alcohol engine than one built for gasoline or kerosene.

Thirteenth—There seems to be no tendency for the interior of an alcohol engine to become sooty, as is the case with gasoline and kerosene.

Fourteenth—With proper manipulation, there seems to be no undue corrosion of the interior due to the use of alcohol.

Fifteenth—The fact that the exhaust from the alcohol engine is not as hot as that from gasoline and kerosene engines seems to indicate that there will be less danger from fire, less offense in a room traversed by the exhaust pipe, and less possibility of burning the lubricating oil. This latter point is also borne out by the fact that the exhaust shows less smokiness.

Sixteenth—In localities where there is a supply of cheap raw material for the manufacture of denatured alcohol, and which are at the same time remote from the source of supply of gasoline, alcohol may immediately compete with gasoline as a fuel for engines.

Seventeenth—If, as time goes on, kerosene and its distillates become scarcer and dearer by reason of exhaustion of natural deposits, the alcohol engine will become a stronger competitor, with a possibility that in time it may entirely supplant the kerosene and gasoline engines.

Eighteenth—By reason of its greater safety and its adaptability to the work alcohol should immediately supplant gasoline for use in boats.

Nineteenth—By reason of cleanliness in handling the fuel, increased safety in fuel storage, and less offensiveness in the exhaust, alcohol engines will, in part, displace gasoline engines for automobile work; but only when cost of fuel for operation is a subordinate consideration. In this field it is impossible to conveniently increase the compression, because of starting difficulties, so that the efficiency cannot be improved as conveniently as in other types of engines.

Twentieth—In most localities it is unlikely that alcohol power will be cheaper or as cheap as gasoline power for some time to come.

You will always find some special leaders in the advertising columns of this paper which our advertisers are constantly offering. Read the liners, especially, and the advertisements generally.

Harvest Time

Draws Near and Nearer

ARE YOU READY?

IF you have a crop of grain or grass growing, you naturally are beginning to think more and more about how you are going to reap the full benefit of the year's growth.

How you are going to turn what Mother Nature has given you, into the largest amount of golden dollars—

—How you may harvest your crop at the least expense, with the least delay and with no avoidable trouble.

Now is the time to make your decision—*not* just before you begin to cut your grain or hay.

You want to be sure that you are ready for harvest—that you have a harvesting machine not of the "may-be-so" kind, but of the "know-for-sure" kind—a machine that you can depend upon with all certainty and assurance.

You can't afford to try "to get along" with a wornout machine, for in all probability it will waste more time, more of the crop, and more of your nervous energy, than a new machine costs.

Neither can you afford to experiment with a machine. Let others do that if they want to and think they can afford it, but as for you, make up your mind to use *only* such machines as time and experience have proved to be successful and dependable.

For, after all, that is the only way in which you can arrive at a wise decision. All over the world during the past thirty to forty years, farmers have been using harvesting machines of many kinds and many types of construction.

Some they condemned beyond all hope, the first time they tried them.

Others they gave a second trial, only to find them wanting.

While to a few—a very few—they awarded the stamp and seal of their approval season after season and year after year.

Does not that mean something to *you?*

Do you know of any better guide than the thirty years' experience of *all* the grain and grass growers of the world?

Could you in a whole lifetime of investigation arrive at a surer decision than *all* the farmers of the country put together?

Of course not.

You know that in this day, the wide-awake farmer knows what he is about. If a majority of farmers favor a certain line of machines, it *must* be because that line has *proved* its value.

There can be no other reason.

And there *is* no other reason for the popularity and reputation of the six leading makes of harvesting machines now known as the International line:

Champion, McCormick, Osborne, Deering, Milwaukee, Plano.

Their popularity has increased from year to year because every year they prove to more and more farmers that they can be *depended upon* with certainty.

And today they are better than ever before in their history.

The International Harvester Company is able to employ, in the design and construction of each machine, every principle and every mechanical idea that more than thirty years of experience in this special line has demonstrated to be of value.

The International Harvester Company is able to command at all times, the very best materials that forest and mine produce—not only the lumber from its own forests and ores from its own mines, but by reason of its steady and increasing requirements and the desirability of its trade, it secures the pick and choice from hundreds of lumber camps, mines and mills.

The International Harvester Company very naturally attracts to its factories the most expert workmen, the most skilled mechanics; so that it has constantly at its command every facility for the improvement of its machines,

—every mechanical principle that experience has approved,
—the choicest materials,
—the most skilled workmen.

Do you wonder, then, that so many farmers all over the world refuse to use any other than these standard machines?

Do you think *you* can afford to begin harvest without first getting one of these machines?

See the International Dealer

and get a catalog of whichever machine you want.

If you don't know an International dealer, write nearest general agency for the name of the one nearest you.

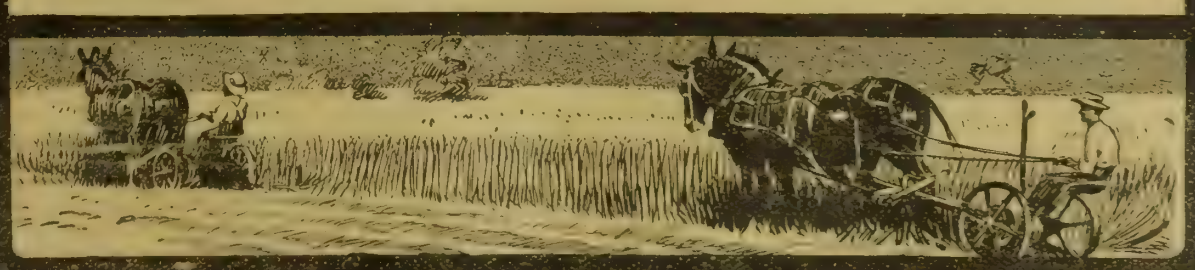
Don't forget this other advantage. If your team runs away or an accident occurs, you can *always* get repairs for an International machine near at hand, and they *always fit.* A full stock of repair parts is carried at every agency.

Equal in importance with a perfect machine is perfect twine. The most perfect twine made may be had in Champion, McCormick, Osborne, Deering, Milwaukee and Plano, sisal, standard, manila and pure manila brands.

WESTERN GENERAL AGENCIES: Denver, Colo., Portland, Ore., Salt Lake City, Utah, Helena, Mont., Spokane, Wash., San Francisco, Cal.

International Harvester Company of America, Chicago, U. S. A.
(INCORPORATED)

International Line:—Binders, Reapers, Headers, Header Binders, Corn Binders, Corn Shockers, Corn Pickers, Huskers and Shredders, Corn Shellers, Mowers, Hay Tedders, Hay Rakes, Sweep Rakes, Hay Loaders, Hay Stackers, Hay Balers, Feed Grinders, Knife Grinders, Cream Separators, Gasoline Engines, Pumping Jacks, Manure Spreaders, Weber Wagons, Columbus Wagons, Bettendorf Wagons and Binder Twine.



CONGO ROOFING

On flat roofs or steep roofs, on old shingles or new buildings, Congo gives roofing service lognest for the least cost.

Let us send you a sample and you will understand why. You will see then that for quality Congo has no equal. It is proof against the hottest sun or the chilliest cold snap or the most drenching rain. As easily laid as a carpet.

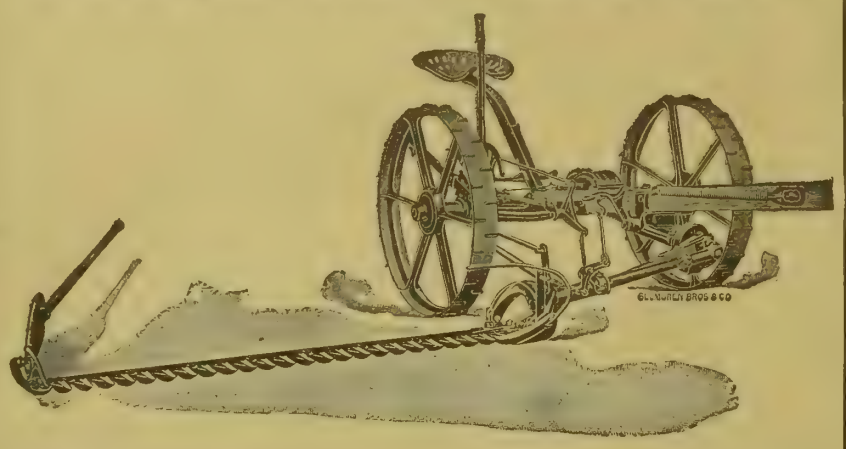
Write for That Sample Now

Buchanan-Foster Co.

519 West End Trust Bldg Philadelphia

Chicago and San Francisco

STANDARD MOWERS



Lightest Draft and most durable machine made. High wheels, special removal clutch boxes, wide frame, roller, brass and ball bearings. Three motion gear with 22-cog gear clutch. Compensating lever, suspension spring and curved cutter bar. All other STANDARD exclusive features.

Our haying tools are tools for you. Write for hay tool folder.

Newell Mathews Co. Wholesale and Retail Wagons, Carriages and Farm Machinery

200-202-204 North Los Angeles St., Los Angeles, Cal.

SMITH'S CASH STORE

H. A. SMITH, President and General Manager

Largest Western Mail Order House

Has Saved the Families of the Coast in honest goods and methods millions of

You Can Save Many

By sending Your Name for a Catalogue Free, 64 pages. Shares Profits with Customers in Cash.

$ $

Established in 1879 by Barclay J. and H. A. Smith

COUPON

On any order you send us in May enclosing this Coupon, or mentioning the Cultivator, we will include, free, a New Map of California and Nevada, up-to-date, worth $1.50, 20x30. Also a Calendar to June 1, 1908.

SMITHS' CASH STORE

NOW NO. 14 TO 24 STEUART ST. S. F. ONLY

WHOLESALE MAIL ORDER RATES TO FAMILIES

WRITE US FOR PRICED CATALOG SAVES ½

WITH A SEIVERT OIL BURNER

You can burn 100,000 feet of air with every 130 gallons of oil; this means perfect combustion. To burn more than 100,000 cubic feet of air with 130 gallons of oil, there is a decided loss of heat. To burn less than 100,000 cubic feet of air there is a loss of fuel. The only safe and reliable burner on the market. Send for full particulars.

SIEVERT OIL BURNER CO. 1001 No. Alameda St., Cor. Main and Ord Sts., Los Angeles, Cal.

Thoroughbred Poland China Pigs and Shoats of both sexes for sale at reduced rates for 30 days. Address W. R. McCaslin & Son, Walsh Station, Sacramento County, California.

Geo. C. Roeding, Fresno, Cal., breeder of

Thoroughbred Holstein Bulls and Heifers

Thoroughbred Berkshire Boars and Sows

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

Nux Vomica.

Dear Cultivator: I clipped the following from the poultry department of a local paper:

"One tablespoonful of nux vomica to a quart of soft feed fed to chickens once a week will, after a few feedings, free them from mites, lice and all insects. Chickens should not be eaten for four or five days after feeding the nux vomica, but it does not affect the eggs."

Can you tell me whether it will hurt the hens or affect their laying qualities? Respectfully, N. E. M., Los Angeles.

It looks as if such an amount of poison as that would kill chicken lice and all the hens, too, and I should think if the fowls are too poisonous to be eaten after partaking of the food that it would be a most dangerous trial to make. When I read that I thought to myself, "How many hens will be killed by that?" I asked a doctor what he thought of this recipe. "More than enough to kill a dozen men," was his reply.

However, I met a homeopathic doctor in Hemet, who told me he had a homeopathic medicine which he fed to fowls to prevent their having lice. He promised to send me some (but it has not come,) for me to try. That may be homeopathic nux vomica and if he will send me some I will experiment with it, but not with the recipe you mention.—Mrs. A. B.

Scabby Potatoes.

Enclosed I send you a slice of potato showing scabby surface. Could you inform us what disease it may be, if any? It is seed shipped us from San Francisco and the farmers are suspicious of it. You would confer a great favor to myself and neighbors by giving the matter your careful attention and inform us what it may be and how to treat it and oblige an old-time subscriber.—Chas. R. B., Pismo.

The piece of potato you send is badly affected with scab. Soak the seed potatoes in a solution made of one ounce of corrosive sublimate dissolved in seven gallons of water. Leave the potatoes in the solution for one hour and a half. Scabby seed may be used with good results in this way.

Scaly Legs on Fowls.

I have got three or four roosters that got scales on the legs, they grow big; some people call them tumors and we don't know how to cure them. Please tell what causes that sickness. —C. V. B., Redlands.

Scaly legs is caused by the scale mite, a very minute insect, which you can see with a magnifying glass. It burrows under the scales and breeds there and it gets so bad that it "matterates" and Dr. Salmon says these insects will even burrow to the bone and the fowl will lose its toes and eventually its life. The cure is—take equal parts of coal oil, lard and sulphur mix together and rub well into the feet and shanks twice a week; at the end of a week wash in hot soap suds, and keep on repeating this till cured, which, if done thoroughly, will be in about two weeks. Or you can rub on mercurial ointment twice a week. The perches should be painted with some lice killer, as the mites travel along the perches and all the fowls will be affected if you are not careful.—Mrs. A. B.

Potato Blight.

C. M., Arroyo Grande, writes describing potato blight and what to do for same. The Cultivator has, several times during the past couple of years, urged the spraying of potatoes with Bordeaux mixture as a preventative, for it has been demonstrated that it pays in a larger yield of potatoes even though the blight is not present so as to be noticeable. The same spray is, of course, good for the trouble at all times and C. M. should spray all his potatoes at once. Those articles on the matter should have been clipped and saved by all growers of potatoes, even if only for their own use.

NORTHERN NEWS NOTES

Captain O. Cayer, Superintendent of Agriculture for the Spreckels Sugar Company at Salinas, says that the milking machines he installed some months ago are an unqualified success. He reports that the cows seem perfectly satisfied with the mechanical attachments to their lacteral fonts and keep up the flow as well as if not better than when they are milked by hand.

Last week John Ashurst brought down to Tres Pinos from his Vallecitos ranch, 28 head of steers to be shipped to San Francisco. The average weight of these "critters" was 1500 pounds, which was going some, considering the long drive. Four of the steers, however, weighed 2000 pounds each.

H. C. Peckham has sustained a loss of some twenty cherry trees at the old Peckham home place on the Salsipuedes near Watsonville. The ground about the roots received such a long continued soaking that the trees were practically drowned out and are dying.

The first cherries of the season raised on the Sacramento river were shipped to the California Fruit Distributing Company, Chicago. They were of the Knight's early black variety, were fine and large, and were raised on J. F. Elliott's farm in Courtland.

Many colonies of apricot scale parasites will be shipped from Sacramento into the fruit sections of the state and will be liberated in the orchards about the middle of next month. The parasities breed but once a year, and are active as soon as the flies are out.

The Corcoran people are not worrying about the lake. Measurements taken yesterday show that the town is fifteen feet four inches above the surface of the lake, and the nearest point of the lake is four and one-half miles from town.

The Hanford Sentinel has made inquiry recently among several orchardists, and they say the peach crop is coming along in fine shape, especially where the trees were properly sprayed with the Bordeaux misture.

The first box of cherries for the season was shipped last week from Vacaville to Philadelphia. These cherries are of the guingne variety and were grown by T. Lee Gates of Vacaville.

Despite all predictions to the contrary, from whatever source they may come, the fruit prospects of the great Anderson fruit section never looked better.

One field of barley at Corcoran, which stands as high as the fence, is estimated to promise a yield of 40 to 50 sacks to the acre.

Recently, the Salinas papers waxed proud over the weight of some grain-fed steers which tipped the scales at 2000 pounds each.

Mr. Hunter also has a thousand acres of alfalfa planted six weeks since, which is about three inches above the ground.

There is a general complaint from farmers of the Salinas valley of the scarcity of men and horses to do field work.

The Corcoran creamery, as stated by the Register Saturday, is now turning out 800 pounds of butter daily.

Mrs. Justgott Hermun—My new home has stained glass in all the windows. Mrs. Notyet Butsoon—Now that's too bad. Can't you find something that'll take it out?

TREES

EVERY ONE TRUE TO NAME

Citrus Trees

All grown at Exetor, in the great Thermal Belt of Tulare County. Our stock is the very best and is grown in deep, black soil, which develops trees with a magnificent root system and fine thrifty tops.

Oranges

Washington Navels—1 and 2 yr. buds.
Valencia Lates—1 year buds.
St. Micheal Dancy's Tangerine Oonshiu

Lemons

Eureka Villa Franca Lisbon

Limes

Bearss Seedless and Mexican.
Citron of Commerce—2 yr. buds.

Give us an opportunity to figure with you.

New Catalogue superbly illustrated, contains much valuable information. Mailed free. Price-list on application.

PAID-UP CAPITAL $ 200.000.00

FANCHER CREEK NURSERIES

INC.

Geo. C. Roeding Pres. & Mgr.
Box 14 Fresno, California, U.S.A.

Seeds Plants Fruit Trees

Most complete stock in the West, embracing everything new of decided merit in both vegetable and flower seeds. Headquarters for Eucalyptus and other tree seeds. Full line of Fruit Trees and Ornamental Stock. ***Write for Our 1907 Catalogue.***

Poultry and Stock Foods

We carry the most meritorious foods on the market, many being recommended by the U.S. Experiment Stations as containing the highest percentage of protein, which is the principal factor in egg production. ***Write for Our New Poultry Catalogue.***

Germain Seed Co.

326-330 So. Main St. Los Angeles, Cal.

AUCTION

50 Head Milk Cows Mules and Horses

TUESDAY, MAY 7th
At 10 A. M.

On Albert Horton Ranch one-half mile north of
MORTON STATION

One-half mile southwest of Workman Station. Take Santa Ana Electric line to Morton Station. Teams in waiting

50 Head first-class Milk Cows, Jerseys, Holstein and Durhams, young and in good condition, mostly fresh, large milkers. Some of these cows are thoroughbreds, in fact all are first-class dairy and family cows.

1 Fine thoroughbred Durham Bull; Span work Mules, 5 and 6 yrs. old, weight 1250 each, well matched; Span work mules 6 and 8 yrs. old, weight 1000 each, well matched; Saddle Mare, 3-yrs. old, weight 900 lbs; McKiney 4-year-old driver; Draft Mare 4 yrs. old, weight 1650, well broken.

Implements—1 Plow, 2 Farm Wagons, 2 sets single Harness, 1 set double Harness, Mower, Etc.

Having sold my ranch I am making a genuine closing out sale and everything will go to the highest bidders without reserve.

Terms—8 months' time will be given on cows, with note and approved security. Horses will be for cash. Barbecue at Noon.

ALBERT HORTON, Owner.

RHOADES, REED & RHOADES, Auctioneers
Office—730 South Spring St., Los Angele

When writing advertisers mention Cultivator

ANGORA GOATS ON THE FARM.

Many farmers who own land which, owing to its rough character, is scarcely fit for cultivation are looking into the merits of Angoras with a view to stocking their rocky, brush pastures, hoping to get good returns from the investment. All who contemplate taking up goat breeding would do well to invest in good grade Angoras rather than common ewes, even though the first cost is greater, because the fleece of the well-bred Angora, as well as her kid, will have a much greater value.

Half-breed goats will not shear marketable mohair, and not until a fifteen-sixteenths cross is reached does the fleece become really valuable. It will be readily seen, then, that valuable time is lost by grading up from common grades.

The difference in the price of mohair is considerable, running from 20 cents for low quality to 30, 35 and even 40 cents for some of fine quality. The long mohair is worth as follows: Twelve-inch, $1; 14-inch, $1.50; 16-inch, $2 and $3. The record price in this country was paid last spring for two bucks' fleeces that weighed 20 1-2 and 31 1-2 pounds, averaging from 12 to 23 inches in length. These were imported South African bucks, brought in by a Vermont breeder.

Probably the best way for anyone except the wealthy man, is to buy a few good does to start with, and in a short time he will have a flock of Angoras that will pay for all the trouble, and if he can keep them, the wether kids will pay for their keeping till they are three or four years old, when they can be fattened and sent to market. We keep mostly registered Angoras, although we have a few yearling and kid does that are not. But we have no brush land, but run them on the pasture fields to keep down brush and weeds. If you have a few Angoras your fences will not be the catch-all places they are on most farms, as the goats will not let thistles go to seed, but will eat off the blossoms when they head out.

While Angoras may be run on any kind of land, from brush to grass, at a profit, a few can be used on any farm to good advantage. A few people may have had some bad luck with them, but this was principally caused by bringing them from a southern climate and starving them on the way, so that they arrived in such a poor condition that they would not do well. If their habits and wants are studied and good judgment is used in their care, there is no reason why these beautiful creatures should not afford both profit and pleasure to their owner.

ANTHRAX.

According to reports Anthrax, which is perhaps the most dreaded of all diseases affecting the brute creation, is making its appearance early this season. Many of our readers no doubt know from actual experience how large the losses are when the disease makes its apearance in their neighborhood.

There is no known cure for Anthrax, but thanks to the discovery of that eminent French scientist, Louis Pasteur, we have a reliable preventive of the disease. In 1881 he discovered Anthrax Vaccine, which has been successfully used since that time in preventing Anthrax in all parts of the world.

The original and genuine Anthrax Vaccine can be obtained through Pasteur Vaccine Company, Ltd., of Paris and London, with New York and Chicago offices in this country, who are also glad to give our readers any information that they may desire on the subject. If interested, we would suggest that you write them, mentioning this paper.

COST OF IRRIGATION.

The above is the title of a valuable booklet just issued by the American Well Works, Aurora, Ill. The following are some of its suggestions: "Successful farming requires fertile soil, intelligent labor and water in abundance. The first two you have—we can provide you with water and all the necessary apparatus for irrigation, and the increased value of your crop will pay the bill the first season. Does this interest you?" The booklet showing figures about cost of irrigation and whether it is costing the reader too much will be supplied free to any of our readers who write them for it. Address, The American Well Works, Aurora, Ill.

Don't Feed

the little chicks anything for the first twenty-four hours. Then feed them dry.

West Coast Chick Feed

Bright, pure, clean, made of the finest grains, seeds, meat, etc., in just the right proportion to make a full, rightly-balanced ration. They like it, too, and eat it up clean, for it contains no waste whatever. It keeps them healthy and it will make them feather faster, grow faster and larger than will any other feed. They need nothing else until over half-grown. If your dealer does not keep it, and will not get it, send $3.35 for 100 lbs., freight prepaid by us to any point in California.

Are your fowls a little off—don't you want to tone them up?

West Coast Poultry Tonic

will do it sure. It is one of the greatest cures for ROUP and all kinds of colds.

Hen Fruit Pays—if you want more, feed

Egg-More

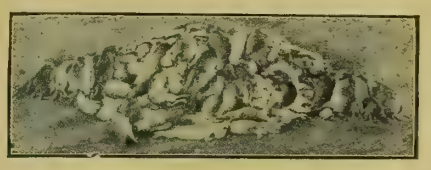
That highly nitrogenous poultry food, rich in protein, to keep the poultry in good health, and enable the hens to convert the surplus aliment into eggs. Just the right addition to a good grain ration.

West Coast Lice Killer and Killamite (powder)

are most effective pest destroyers. Nearly all the diseases of poultry may be attributed to lice and mites. Don't let them get the best of you. Get the best of them. And did you know that Killamite is just as good for killing plant insects without harm to the plant. Testimonials of public gardeners and others. Try it on your roses. 50c sifting cans by mail if your dealer won't get it for you.

West Coast Poultry Foods and Remedies

are the best made and, quality considered, the cheapest. If your dealer doesn't sell them, send to us. Booklet free. Send us names of 12 persons keeping poultry and we will send you free "The Poultry Manual" by those high authorities F. L. Sewell and Ida E. Tilson, profusely illustrated.



This is a photo of 201 Gophers killed in one day on a 10-acre field with one bottle of

BILLE'S GOPHER POISON

Not one of the ordinary poisons, but in a class by itself. Endorsed by Agricultural colleges and Experiment Stations. Has had greatest success in the Middle West. The secret being that it is most attractive to gophers, squirrels, etc., and sure death to them. It gives the grain a glossy coating, retaining the poison for weeks. Hundreds also die in their holes by eating it there. We have bought the patent right for this section and are selling at the eastern price, lower than the ingredients can be bought at a drug store. Money refunded if not as represented—so printed on the bottle. If your dealer does not keep it sent $2.50 for two bottles, express prepaid by us—not less than two bottles.

Confident that a trial will prove beyond question that the best condition powder made is

West Coast Stock Food

We will send to new customers one 25-lb.

$3.00 PAIL FOR $2.00

or one 50-lb. $5.75 double sacks for $3.50, and will prepay the freight to any point west of the Rockies. Not more than 50 lbs. to each one, and we reserve the right to withdraw this offer without further notice. No cheap premiums, no gaudily colored pictures, but a legitimate business offer to induce a trial, hoping to add many steady customers. We are charging up the difference to our advertising account, feeling sure that a trial of the goods is the very best advertising.

No strings to this offer. Just send us your name, the freight station to whch you want the goods shipped, mention this paper, and we will do the rest. Send money order or check with your order, and if every thing is not exactly as represented your money will be refunded. The First National Bank of this city, or Bradstreet's Agency, or any leading firm, can inform you as to our reliability. WEST COAST STOCK FOOD has for many years been a standard condition powder in this section. See our full page adv. in the March 7th and 28th issues of this paper or send for circular with testimonials.

Manufactured by the

West Coast Stock Food Company

818 San Fernando St. (through to Alameda) Los Angeles, Cal.

The natural asphalt in Genasco Ready Roofing is like sap in a tree.

Keeps it alive, keeps off the rotting, drying, melting, cracking, destructive influences of weather.

Nothing else does. You know how shingles warp and rot, tin rusts, slate breaks, coal-tar dries out and cracks.

The Trinidad Lake asphalt in Genasco is centuries old and is still water-proof. It will last as long as you need it.

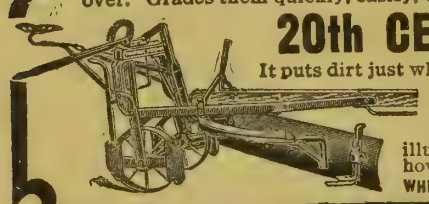
Wide-awake dealers everywhere sell it—smooth or mineral surface.
Send anyway for samples and Book 35

THE BARBER ASPHALT PAVING COMPANY
Largest producers of asphalt in the world
PHILADELPHIA

New York San Francisco Chicago

HOW MUD ROADS MAKE GOOD ROADS

Level those mud heaps, raise up the center, make the rain drain off to the sides instead of soaking in. Then your clayey, nasty roads will be smooth and pleasant to haul over. Grades them quickly, easily, with a



20th CENTURY GRADER

It puts dirt just where needed. Easily guided and handled by one man, simple to understand. Reversible either way to 50 degrees. Made of steel; strong, rigid. Very popular with cities and townships. Our free new illustrated book "Delightful Roads" tells how to make them. Send for it now.

WHITE CITY GRADER CO., BOX D, WHITE CITY, KAN.

The 20th Century Grader can be seen at the store of Hawley, King & Co., 224-228 So. Los Angeles St., Los Angeles, Cal.

JEWELRY CATALOGUE No. 10

Perfect Blue White Diamonds with Genuine Opal or Turquoise Center. No. 196, $120.00

80 pages, beautifully illustrated, instructive and interesting.

MAILED FREE UPON REQUEST

The buying advantages of our three large stores means a saving for you on your jewelry purchases.

Write for it To-day

BROCK & FEAGANS
Jewelers
Broadway and Fourth Street
LOS ANGELES, CALIFORNIA

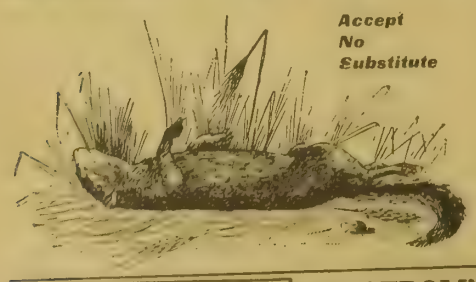
Flawless Blue White Diamond 14K Gold Hand Carved Tiger Claw Ring. No. 197, $140.00

20th CENTURY LIGHT CO.

DO YOU LIGHT AND COOK AND RUN YOUR INCUBATOR WITH ACETYLENE GAS? COME IN AND SEE—OR WRITE ABOUT THE NEW FEED-THAT CLEANS IN ONE MINUTE ONCE IN 6 MONTHS! WE GUARANTEE IT!

HOME OFFICE 609 E. 7th St. L.A. CAL.

Kill-Quick SQUIRREL AND GOPHER POISON



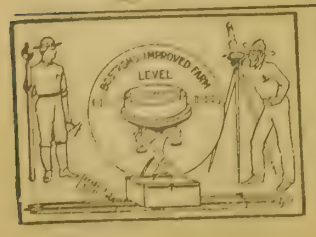
Accept No Substitute

IT DOES THE WORK

Effectually Destroys these Orchard Pests

Ask your Dealer for it

Prepared by
WESTERN WHOLESALE DRUG CO.
LOS ANGELES, CAL.



BOSTROM'S IMPROVED FARM LEVEL

Used for irrigation and drainage work. Cheapest and best level yet invented for farm use. Has the latest patented improvements in simplicity and usefulness. Can be operated by any one. Price including telescope tripod and target rod $12.50.

PALACE HARDWARE COMPANY,
456 Golden Gate Avenue, San Francisco.
COAST AGENTS.
Send for Circular.

Household Department

LITTLE BOY BLUE.

Under the haystack, little Boy Blue
Sleeps with his head on his arm,
While voices of men and voices of maids
Are calling him over the farm.

Sheep in the meadows are running wild
Where a poisonous herbage grows,
Leaving white turfs of downy fleece
On the thorns of the sweet, wild rose.

Out in the fields where the silken corn
Its plumed head nods and bows,
Where the golden pumpkins ripen below,
Trample the white-faced cows.

But no loud blast on the shining horn
Calls back the straying sheep,
And the cows may wander in hay or corn,
While their keeper lies asleep.

His roguish eyes are tightly shut,
His dimples are all at rest;
The chubby hand tucked under his head,
By one rosy cheek is pressed.

Waken him! No! Let down the bars
And gather the truant sheep,
Open the barn-yard and drive in the cows,
But let the little boy sleep.

For year after year we can shear the fleece,
And corn can always be sown;
But the sleep that visits little Boy Blue
Will not come when the years have flown.

—Abby Sage Richardson.

WOMAN'S DIPLOMACY.

PROVIDENCE, who manages all things wisely and economically, wastes no talents on man for the management of woman. The wisdom of this course is that man needs no such talent until after marriage, and after marriage he has a wife to manage other women for him. The economy consists in the fact that men shall marry. A single man never appreciates the sensitiveness of the opposite sex. Woman hides her wounds, and man often stamps through her feelings with seven league boots.

An incident that occurred to me after my marriage taught me this, and since then I have invariably left the settlemen of my differences with other women to my wife. I had passed middle life before marrying. I had met ladies, as other bachelors meet them, socially, but my club was my home, and I was never thrown into intimate association with any woman. But I considered myself sufficiently mild mannered and deferential to the softer sex for all ordinary social purposes. What wounds I had inflicted I did not know, nor was I conscious of having inflicted any.

The honeymoon over, my wife took me in training, and it soon became apparent that I needed a great deal of it. However, in about a year I supposed I was thoroughly educated. One day my wife informed me that her dearest friend, whom she had not seen since we had been married, was coming to visit her, and she was specially anxious that I should make a good impression. I resolved to be on my guard and put on my most affable and deferential manner.

The first evening of Miss Bland's arrival my wife, my sister and our guest sat down to a game of whist. I was of course assigned to play with Miss Bland. I got on swimmingly. I saw that my partner knew little of the game, and it gave me an opportunity to show my wife that I could pass her friend's mistakes without the slightest reference to them. I would probably have gone through the evening without trespassing on my partner's feelings had not she made a misplay that gave me an opportunity, as I thought, to make a brilliant strike in soothing her.

I had a fine long suit, all of which I could make if I could draw my opponents' trumps; but, having only four trumps myself, all depended upon my partner husbanding hers. My wife led a small spade, and I, desiring to get the lead, put on the king. When my partner played, the trick was mine. She trumped it. I winced, but said nothing. My partner's error gave our opponents the odd trick.

"I shouldn't have trumped your trick, should I?" said Miss Bland, reddening.

My wife explained to her that to trump one's partner's trick was not considered always the best course, but that in this case it didn't matter since we were playing for fun.

I didn't see the fun in playing that way, but refrained from comment.

"Now I think of it," said Miss Bland, much mortified, "somebody told me once that to trump one's partner's trick was the worst mistake a player can make."

My wife looked at me appealingly to say something to make my partner feel easier, and it was then I tried to soothe her.

"You only trumped my king. There is a worse thing than that." I said softly.

"What is it?" asked Miss Bland.

To trump your partner's ace.'

Miss Bland cast a quick glance at me, and I cast a glance at my wife, expecting to see approval in her face. I saw a frown.

There was an ominous tremor on Miss Bland's lip, and presently she arose, left the table and went upstairs.

"Now you've done it," said my wife as she left the room to follow her friend.

I walked up and down the floor cursing myself for a fool and wondering if my wife would be able to explain matters and get me out of the scrape. I also wondered how she would manage the diplomatic task. Of course she would tell Miss Bland—what else could she tell her?—that I had intended my remark to make her blunder seem less a blunder. But had I solely so intended it? Women are quick to see a slight, and perhaps Miss Bland might have detected a trace of sarcasm in my voice. "Thank heaven," I muttered, "it's woman against woman. I'm sure the more I excused myself the worse I would make the matter."

My wife returned, but without her friend.

"Well?" I asked eagerly.

"She's coming down presently, after she's got rid of the appearance of tears."

"Tears?"

"Of course. Do you suppose her feelings are sheet iron?" Then, seeing the pain she was inflicting on me, she added, "It's all right now."

"Did you tell her I intended"—

"Nonsense! I told her nothing of your intentions."

"What did you tell her?"

"Why, I told her that you had been a bachelor all your life, had lived at clubs and all that and hadn't been used to playing cards with women—in short that"—

"I didn't know any better."

"Yes."

"And it made her feel all right?"

"Yes."

"My love," I exclaimed folding her in an embrace, "you're a brick. You can beat me at diplomacy every time."

Miss Bland came down, and the game proceeded. She and I became fast friends.—Alexander Ely.

A SUBSTITUTE FOR GLUE.

If you have no glue handy, and you want to stick something, try this. Take a small piece of cold boiled potato and rub it down with your finger on a piece of paper for about five minutes. It will then be of the right consistence, and will stick as well as the strongest glue.

SEEDED RAISINS.

Seeded raisins and citron chop much easier if boiling water is poured over them and they are allowed to stand a few minutes, when it should be drained off.

The following little anecdote told recently carries a great meaning:

"Mary, come out, the violets are in bloom."

"No, I cannot, I am housecleaning."

"Dirt will keep, but violets won't."

She went.

The most important thing in the world to me is a lamp-chimney.

I have been for years and years making the best, and always trying to make them better. I put MACBETH on them and no one ever disputes my claim.

The Index explains how to get a MACBETH chimney to fit every lamp, and how to care for lamps. Sent free to everyone asking for it.

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NEW ORCHARD CULTIVATOR

Every orchardist ought to know about this cultivator. A riding tool designed especially for orchard work. A favorite on the coast. Ask your dealer.

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Send 4 cents in Stamps for Flying Dutchman Song Book

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Capitalization $250,000.00

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eald--Chesnutwood.
usiness College and Normal School, Fresno, California
eald's Stockton Business College id Normal Institute, Stockton, California
eald-Dixon Business College, Bacon Block, Oakland, California
eald-Chesnutwood Business College. Santa Cruz, California

Colleges will be opened later in other cities. Send for New Catalogue.

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Your Eastern Trip

SOUTHERN PACIFIC

May be arranged so that you may travel by way of

lew Orleans and the Sunset Route
an Francisco and the Ogden Route
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Enjoying the balmy air of the South or the cool and bracing air of the North.

'ersonally conducted excursions very day from Los Angeles via ll routes without change to prin-ipal eastern points.

City Ticket Office:
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Southern Pacific

DECORATION IN THE HOME.

"Decoration in the Farm House," besides suggesting principles in home decoration, emphasizes the desirability of simplicity. We gather too much about us; it collects in the cupboards and on the shelves; it has to be dusted; it occupies a place where space would be more expressive; it has become meaningless in our lives; it seems too good to throw away but it is really doing more harm than good; it troubles us as any other clutter will. Our tastes have changed since certain ornamentation was placed in our parlors. We may have thought it a desirable acquisition at the time and no doubt it did us good then. If it does not do us good now, it has served its usefulness.

Beauty is in the mind of the observer and we have a right to change our minds. Our larger fault is in clinging to old sentiments. We need to throw away many of them and to get new ones. Our lives need this rejuvenation.

The question arises as to what to do with the mats, the vases, the mottoes, the picture cards, the poorly framed pictures, the lambrequins and whatnots. A good motto is to keep that which is uplifting as long as it remains so. Then if it is likely to be helpful in the life of some other person, it may be passed on. If it is not calculated to serve that use, it should help to make a bonfire.

We may not understand the principles of art, and yet be possessed of artistic temperament or capable of artistic training. We may hold the erroneous idea that to be artistic one must express it by painting a picture. Everyone may express an artistic temperament either in dress, in house furnishings, or even in the arrangement of flowers in a vase. This is the adaptation of the artistic sense to life itself, which is the best aim in education.

One simple and effective standard is nature itself. A pot of flowers, a vase of flowers, effectively placed is worth all of the questionable ornament which can be supplied. Life has zest just in the contemplation of these simple forms of art.

HUSBANDS WHO NEVER PRAISE.

Apparently there are some men in the world who would not be likely to live long if by any possibility they should be betrayed into praising their wives. The man of this description is a self-sufficient creature, who evidently believes that creation was instituted for his benefit. He is a little surprised and a good deal annoyed that things were not arranged more to his liking, but he tolerates the arrangement, not because he approves of it, but because he cannot help it.

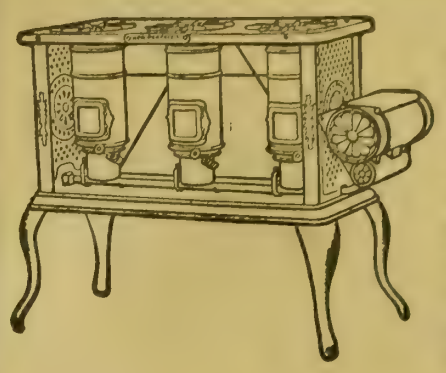
The wife of this man is a woman whom no old maid would envy. And no old maid should every marry this man when his first wife is worn out and laid in the grave; if she does she will regret it to her latest day—that is, unless she has backbone enough to put the man where he belongs and keep him there. And it is never pleasant to any true-hearted woman to feel that she has to master her husband in order to live comfortably with him. The man who never praises his wife will find fault with everything on every possible occasion. It is the easiest thing in the world to find fault—easier than the proverbial sliding down hill. It gets to be a habit with some men, and they are hardly conscious when they are exercising it.

Why cannot a man show his wife that he appreciates her efforts to please him? Why cannot he praise the pudding of his wife as well as the pudding of her neighbor, Mrs. Jones? Why cannot he speak kindly of her mince-pie, and charitably of her sponge cake? Why cannot he say that the bonnet is becoming to the face of the woman who loves him? Kind words make his wife happy, and no decent man ought to withhold them.—McCall's Magazine

TO KEEP OUT FLIES.

Keep a box each of blooming mignonette and geraniums in your open windows to prevent the entrance of those nated intruders known as flies. A few drops of oil of bay leaves kept in a tiny dish near the window will have the same effect, it is said.

A Wonderful Oil Stove



Entirely *different* from all others. Embodies new ideas, new principles. Easily managed. Reduces fuel expense. Ready for business at moment of lighting. For your summer cooking get a

NEW PERFECTION
Wick Blue Flame Oil Cook-Stove

Its heat is highly *concentrated*, Does not overheat the kitchen. Oil always at a maintained level. Three sizes. Fully warranted. If not at your dealer's, write our nearest agency for descriptive circular.

THE *Rayo Lamp* is the best lamp for all-round household use. Made of brass throughout and beautifully nickeled. Perfectly constructed; absolutely safe; unexcelled in light-giving power; an ornament to any room. Every lamp warranted. If not at your dealer's, write to our nearest agency.

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(INCORPORATED)

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LARGEST IN SOUTHERN CALIFORNIA

RESOURCES OVER **$17,000,000.00**

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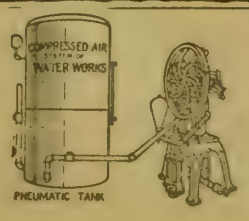
Largest National Bank West of Denver and South of San Francisco

First National Bank
United States Depository for Government Funds

TOTAL RESOURCES, $20,000,000

ADDITIONAL ASSETS—One Million Five Hundred Thousand Dollars invested in the stock of the Los Angeles Trust Company and the Metropolitan Bank and Trust Co., and held by the officers of the First National Bank, as Trustees, in the interest of the shareholders of that Bank.

We are prepared to extend to the small depositor the same personal and careful attention that we do to our largest accounts.



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ECONOMY HOT AIR PUMP constant, permanent water supply at even temperature and any desired pressure the year around. RUN BY HEAT. NO EXPLOSION. NO EXHAUST. NO TROUBLE. NO NOISE. A child can run it. We equip your WATER SUPPLY COMPLETE with either Hot Air, or Electric Pump, pneumatic or open tank. TEN DAYS TRIAL.

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LINERS

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Advertisements in Liner Column 1¼ cents per word. Eight words to a line. No advertisement taken for less than 25 cents.

EGGS FOR HATCHING.

McKINLEY POULTRY FARM—BREEDERS of Bluff and White Wyandottes. Member American Buff Wyandotte Club. Golden Seabright and Pyle Game Bantams. Eggs $3.00 and $2.00 per 13. Take San Pedro Interurban car to McKinley, first house north. BOX 11, R. F. D., Gardena, Cal.

BLUE RIDGE POULTRY YARDS, W. H. Brown, Prop., 128 Ave. 32, Los Angeles, Cal. Breeder of Blue Andalusians. Won more first prizes than all our competitors combined. All specials went to our strain. Eggs $1.50 and $2.00.

MY WINNING AT THE LATE BREEDERS' Show on Rose Comb Black Minorcas were three prizes from four entries. Eggs two dollars per fifteen. Correspondence solicited. M. E. BROWN, Box one hundred, R. R. No. one, Los Angeles, Cal.

WHITE LEGHORN AND WHITE WYANdotte eggs for hatching, from extra choice, trap-nested, bred-for-eggs stock. Leghorn eggs $5.00 per 100; White Wyandotte eggs $1.00 and $1.50 per setting, $6.00 per 100. F. T. McLAUGHLIN, Gardena, Cal.

S. C. WHITE LEGHORN EGGS FROM THE bred-to-lay Blanchard strain. Large birds. $1.00 for 15; $6.00 per 100; Free city delivery. C. M. GIBBS, R. F. D. No. 4, Los Angeles, Cal. Phone W. 591

35c PER DOZEN; S C. WHITE LEGHORN eggs for hatching, fine stock, large eggs, 95 per cent. fertile. Carefully packed. MATT MARTIN, R. F. D. G street, Ontario, Cal.

FARM LAND.

RICHEST PRAIRIE LAND IN NORTH America. Yielding greatest average crops known of wheat, oats, barley, sugar beets. $12 to $25 per acre. Easy terms. Water sure. Free fare on cetain conditions. Address W. R. GILSON, 121 E. 4th street, Los Angeles, Cal.

POULTRY.

WHITE WYANDOTTES—DUSTON AND White—all strains. Stock for sale. Eggs for hatching, $2 per 15; $10 per 100. Also Peafowls and Plymouth Rock Homing Pigeons. MRS. N. P. BAILEY, Colegrove, Cal. Cor. Melrose Ave. and Gower St. Telephone, Home E9006.

FOR SALE—A FEW MORE WHITE LEGhorn pullets, eight dollars per dozen. Tom turkey and two hen turkeys, seven dollars. Black Minorca Eggs for hatching, $1.25 per 15. W. O. SHAW, P. O. Box 201, San Luis Obispo, Cal.

SPECIAL SALE—WILL SELL CHEAP 1ST, 2nd and 3rd prize Barred Rock cockerels at late breeders' show, these are grand birds and will give special price if taken at once. Also eggs. Write your wants. FRED ESPE, 4425 South Main street, Los Angeles, Cal.

COLUMBIAN WYANDOTTES, THE FANCY and Utility Fowl. Eggs and stock for sale. Eggs from Pen No. 1, headed by First Prize Cock at late Los Angeles show, $5 for 13; No. 2, $3. Also Black Tailed Japanese Bantams, $4 per 13. Frank J. Ironmonger, Hollywood, Cal.

SINGLE-COMB WHITE LEGHORNS, FINE white, large, birds; good layers. Hatching and shipping chicks. Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER, Ontario, Cal.

FOR SALE—TWO BUFF ORPINGTON hens and one trio of Black Orpingtons. High grade stock; price reasonable. J. W. WHITNEY, 413 East 1st street, Long Beach, California.

PARTRIDGE WYANDOTTES—C. ANDREWS 332 West Third street, yards at Hollywood, Cal., eleven prizes and silver cup at Poultry Breeders' Show 1907.

HOMERS FOR SQUAB BREEDING. GUARanteed mated birds. Prolific breeders. $1.50 a pair. EMMA V. WEATHERS, Nipomo, Cal.

R. I. REDS—EGGS $2, CHOICE IMPORTATIONS; a large trio for $8. GOODACRE BROS., Compton, Cal.

TURKEYS.

FOR SALE—THOROUGHBRED MAMMOTH Bronze Turkey Eggs, $2.50 per setting of 13. J. E. PECK, Calexico, Cal.

BABY CHICKS FOR SALE.

BABY CHICKS—ALL VARIETIES OF Standard Breeds by dozens, hundreds or thousands. Leghorns, $10 per 100. DOKE STOCK FOOD CO., 711 S. Main, Los Angeles

LIVE STOCK.

YOUNG REGISTERED JERSEY BULLS from choicest cows of Judge Peter J. Shields' herd. $35 per head. Prize winning sires and dams. Pedigrees sent for inspection. TRIBBLE BRO'S, Elk Grove, Cal.

TREES.

FOR SALE—4000 VALENCIA AND 1000 W. Navels; one year buds on three year roots, clean and vigorous; buds taken from bearing trees. F. E. CHAPMAN, R. F. D. Box 34, So. Craig Ave., Pasadena, Cal.

MISCELLANEOUS.

FOR SALE—POTS, 2IN. ONLY, AT $2.50 per 1000, net. Try sample 1000. Also loose glass (washed), ventilator sash, hot-bed sash, half-tone cuts, etc., etc. CHAS. HOWARD, 2121 Park Ave., Riverside, California.

FOR EXCHANGE—1 FINE FEED CUTTER, value $15, for fancy poultry or pigeons. Also Express wagon for laying hens (large breeds) H. L. BAUER, 737 S. Spring St.

WANTED—20 GALLONS OF EITHER ORange seed or pomelo seed. Am waiting to pay good price for choice seed. T. J. WALKER, San Fernando, Cal.

PIGEON PLANT FOR SALE 200 FINE Plymouth Rock Homers, a bargain. Address BOX 92, R. D. 4, Santa Rosa, Col.

DUCKS.

INDIAN RUNNER DUCKS—A WORLD beater for producing Eggs. Pure strain. $1.00 for 13; $5.00 for 100. Black Langshans, Prize Pen. $2.00 for 13. F. M. BENDER, Corona, California.

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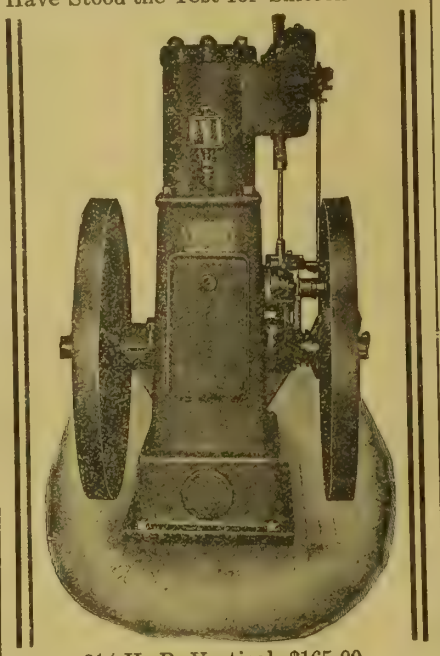
Have Stood the Test for Sixteen Years



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Orchard Disc Plows

Forty-five of these plows have been sold by one agent at Riverside this season.

Used and endorsed by Arlington Heights Fruit Co., Riverside, Cal.; Chase Nursery Co., Riverside, Cal., and hundreds of other prominent orchardists throughout Southern California.

If your dealer does not handle this plow, write us.

Arnott & Company, Inc.
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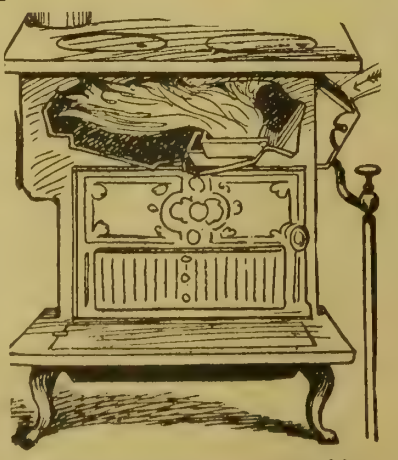
Our new No. 9 Implement and Wagon Catalogue mailed free for the asking.

Hague Domestic Oil Burner



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A device for using low grade distillate. Saves 40 per cent of cost of coal or city gas—let us prove it. Write for circular.

Hague Domestic Oil Burner Co.
214 Winston St. Los Angeles, Cal.

The Produce Markets

Los Angeles Markets

LOS ANGELES, May 2, 1907.

Butter.

There was no change in the official price of butter today although receipts were large, which is customary on Tuesday. The market is steady.

Valley Creamery	47½
Coast fy,	45
Cooking	20

Cheese

Cal. Young American, per lb	19
California Anchor	18
Cal 3-lb. hand	20
Northern, fresh	17
Domestic Swiss	22
Imported Swiss	30

Eggs and Poultry

Receipts of eggs yesterday as shown this morning by the reports of the Los Angeles Produce Exchange were less than for the two days previous and the egg committee put the official selling price back to the former quotations—20 cents. There was active trading in eggs today and an effort was made to influence the market by selling freely during session. As a result 40 cases of eggs changed hands at a price which it seemed would prevent the committee from raising the selling price, but the eggs were sold by only one or two dealers, while buying at the price was general.

Eggs local, per doz	20
Northern Candled	19
Fresh Eastern	18

The following are average prices which dealers pay to producers for live weight:

Hens, per lb.	16
Young Roosters, per lb	18
Fryers	22
Broilers, per lb	25
Old Roosters	8
Turkeys	17
Geese	12
Ducks	15@16

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lbs.	7.75@8.00
Prime Steers.	5.50
Heifers	4½
Calves per lb.	5
Sheep, ewes, per head	5.00@5.25
Lambs per head	6.50
Wethers	5.50

Potatoes

Potatoes were again in large supply and there is still a pressure to sell while demand is feeble.

Sweets, Yellow, per sack	5.00
Sweet, White per sack	4.75
Colorado	1.75
Minnesota	1.70
Early Rose, Eastern,	2.25
Oregon,	1,80

Vegetables

Onions declined this morning, selling to the trade at $1.85.

Rhubarb has declined to $1.25 per box.

There was no change in the green vegetable situation. The supply was ample and prices were practically unchanged.

Asparagus, lb	10@14
Beets, per doz	30&40
Bell Peppers, Green, lb	5
Cabbage, sack	40@70
Chili Peppers, Green	30
Chili, Dried, per lb	13½
Cucumbers, per doz.	75@1.50
Cauliflower, per crate	3.00
Carrots, per doz	35@@40
Celery, per doz	30@50
Egg Plant, per lb	15
Garlic per lb	6
Green Onions, doz. bunches	15@25
Lettuce, per crate	40@75
New potatoes, per lb.	3
Lima Beans, per lb	7@8
Onions, Aust. Northern, sk	2.60
Nevada	2.50
Bermudas	1.85
Parsnips, per doz	35@50
Rhubarb, per box	1.25
Radishes, per doz	15@20
String Beans, per lb	10
Sugar peas, per lb	2@3
Summer Squash, crate	1.50
Tomatoes, Mexican crate	1.50@2.00
Turnips, doz. bunches	10@20
Wax Beans, per lb	16@18

Citrus Fruits

Lemons	2.00
Valencias	1.50@2.00
Navels	1.25@1.50
Grapefruit Seedless	2.00@2.50
Grapefruit seedlinggs	1.25@1.50

Fresh Fruits

A few more boxes of cherries arrived today, but the quality was poor and they had a slow sale. No apricots arrived. Berries were unchanged.

Apples, Bellefluer, per box	1.50
Apples, Ben Davis	1.50

Dried Fruits

Evap. Apples, fancy, per lb	9
Apricots	18
Peaches.	12
Pears	12@13
Prunes, fy,	5@8

Beans, Dried

Limas, No. 1, per cwt	4.75
Pink No. 1	3.00
Lady Washington	3.00
Small White	3.55
Black Eyes	5.50@6.00
Garvanzas	5.50@6.00
Lentils	12@15

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb. cans,	8
Light Amber	6½@7
Comb, water white, 1-lb. fms	15@16
Light Amber	14

Nuts

Almonds per lb.	19
Peanuts, Virginia	9
Peanuts California	6@7
Walnuts, No. 1 S. S.	14

Hay

Barley, No. 1	14.50 @16.00
Barley, No 2	11.00@12.00
Alfalfa, Local, per ton	15.00@16.00
Plain Oat Hay, No. 1	17.00@19.00
Plain Oat Hay No. 2.	9.00@15.00
Wheat No. 1	14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, new, per cwt.	1.50
Rolled Barley	1.35
Corn, per cwt	1.40
Cracked Corn	1.45
Feed Corn Meal	1.50
Shorts	1.30
Bran	1.20
Oil Cake Meal	2.50
Cocoanut Meal	1.40

San Francisco Markets

SAN FRANCISCO, April 30, 1907.

Butter.

Both butter and eggs were held steady yesterday at the same figure which ruled on Saturday. Supplies were abundant but there was no special complaint about undue accumulations.

California, ex per lb	22
California, firsts	
California seconds	
Packing Stock	

Cheese

New California, fancy	1
Cal. Young American, fancy	16½

Eggs and Poultry

Fresh Ranch Eggs	
Eggs, first, per doz.	1
Hens, per doz., small	5.00@5.5
Hens, large	600@7.5
Young Roosters, large	7.00@9.0
Young Roosters, small	4.50@5.5
Old Roosters	5.00&6.0
Fryers, per doz	6.50@7.5
Broilers, per doz	4.00@6.5
Ducks, young	6.00@8.0
Geese; per pair	2.00@3.0
Turkeys, per lb	16@1

Live Stock

Steers. No. 1	9@9
No. 1 Cows and Heifers	6½@
Hogs, 80 to 130 lbs	8@8
Hogs, 250 to 350 lbs.	
Calves, per lb	5@5½
Lambs, yearlings	6½@

Potatoes

Salinas Burbanks ctl	1.50@2.0
Rivers	1.85@2.1
Sweet Potatoes. ctl	2.75@3.0
New Potatoes	4@

Vegetables

Asparagus	6@1
Cucumbers, per doz.	1.00@1.5
Chili Peppers, Green lb	15@2
Egg plant per box	3.00@3.5
Green Peas, per lb.	10@1
Squash, crates.	65@
Onions, Red, per sack	75@1.0
Onions, Yellow	75@1.0
Onions, new per lb,	
Peppers, Green Bell	
Rhubarb, per box	75@1.
Tomatoes, Mexican	1.50@2.

Citrus Fruits

Lemons	75@2.
Navels	1.25@2.
Seedlings	1.
Grapefruit, seedlings	1.00@1.
Grapefruit, seedless	2.00@3.
Limes	3.

Fresh Fruits

Apples, per box	1.50@2.

Dried Fruits

Apples (evap.) .....6@8½
Apricots, per lb .....16@20
Figs, white .....4@5
Prunes .....3@4½
Peaches ..... 10@12½
Raisins, seeded (1906) ..... 3½@10
Thompson, unbleached 7½
Thompson, bleached ..... 9@11

Beans and Seeds

Sales of Beans still continue on the moderate scale which has now prevailed for several weeks. Prices are held firmly, and there are no concessions being offered to induce trade.

Limas, No. 1 ..... 4.15@4.25
Pink ..... 2.40@2.60
Large White ..... 2.50@2.75
Small White ..... 2.95@3.05
Black Eyes .....5.00@5.25
Red Kidneys 3.75
Bayo .....2.70@2.85

Hops

Fancy, 12½c; choice, 12c; prime 10½@11c; common, 8@10c per lb.

Nuts

Almonds new .....14@18
Peanuts, Viginia 6½
Peanuts, California .....5½@6
W lnuts .....15@16

Honey

Clear White Comb 16½
Amber .....14@15
Extracted .....5½@7

Hay

The hay market maintains a good, strong tone and the inquiry is sufficient to kep supplies well cleaned up. Other feedstuffs are held steady.

Alfala, local.....8.00@12.00
Oat .....16.00@20.00
Wheat. No 1 .....23.00@26.00
Wheat, No 2 .....14.00@18.00

Grain

Wheat No 1 .....1.35@1.45
Barley No 1 .....1.20@1.23
Corn, small yellow 1.50
Corn, yellow .....1.27@1.32
Oats, White .....1.42@1.65
Oats, Red .....1.30@1.50
Ground Barley, per ton ....27.00@28.00
Bran per ton .....22.00@23.00
Straw, per bale .....45@75
Feed Corn Meal, per ton 31.00
Cracked Corn per ton 32.00
Oil Cake Meal, per ton 33.00
Cocoanut Cake, per ton 27.00
Calalfa Meal, per ton 31.00
Mealfalfa, per ton 21.00

Citrus Market

NEW YORK MARKET.

Territo Thomp's imp Cor'a Dist.. $4.20
Swastika Thomp's imp Corona Dist..... 3.25
Victoria xfy A H Ft Ex..... 3.30
Golden Rule xc Riv Ft Ex..... 3.35
Cosmos fy S B Ft Ex..... 2.65
Alhambra xc S T Ft Ex..... 2.95
Don Quixote ch S T Ft Ex..... 2.95
Floral ch S B Ft Ex..... 3.60
Quail xch O K Ft Ex..... 2.45
Alhambra xch S T Ft Ex..... 2.80
Don Quixote ch S T Ft Ex..... 2.90
Pointer xch A C G Ft Ex..... 2.50
Hunter st A C G Ft Ex..... 2.90
Floral ch S B Ft Ex..... 2,85
Liberty fy Loveless Ft Co..... 2.65
Pointer xch A C G Ft Ex..... 2.35
Pardise fy S T Ft Ex..... 2.95
Golf ch S T Ft Ex..... 2.95
Bonnie st S T Ft Ex..... 2.60
Parrot xch S A Ft Ex..... 3.15
Butterfly xch Covina Ft Ex..... 2.80
Airship xch T C Ft Ex..... 2.45
Solano o r Stewart Ft Co..... 2.55
Mariposa fy C C U..... 3.45
Sunflower fy C C U..... 2.95
Geranium xch C C U..... 2.90
Poinsettia xfy C C U..... 2.55
Triumph C C U..... 2.45
Victory xch C C U..... 2.20
Golden Sceptre Rialto Co..... 2.90
Criterion o r Penn Ft Co..... 2.80
G. Flower xfy Redlands O G A.. 2.50
Golden Gate xch Redlands O G A 3.70
Rose Thom's imp Redlands O G A 3.70
Clover xch Redlands O G A..... 3.55
Rose Thom's imp Red O G A.... 2.90
Clover xch Redlands O G A..... 2.40
Orchard o r Nat Orange Co..... 3.65
Standard st Nat Orange Co..... 3.25
Alpha xfy Riv Ft Co..... 3.60
Elk xch Riv Ft Co..... 3.45
Delta..... 3.20
Mt. Harrison fy F L Sewell..... 3.05
Mt. Harrison xch F L Sewell.... 3.05

Laverne Beauty M L Sparks..... 3.20
Old Mission fy C C Chapman.... 2.50
Golden Eagle st C C Chapman.... 2.50
Lion Head xfy I L Lyon & Sons 2.95
Flower fy Upland Dist..... 2.75
Flower st Upland Dist..... 2.55
Tiger Head ch I L Lyon & Sons.. 2.50
Laverne Beauties M L Sparks.... 3.10
Carnation xch Moulton & Greene 2.60
La France ch Kuns Ft Co..... 1.85
Old America xfy Pinkham & McKeVitt..... 2.30

BLOODS—
Mariposa fy Cal C U..... 3.40
Blue Flag xfy Spence Ft Co..... 3.30

NAVELS (Halves)—
Mahala Thomp's imp..... 2.05
Cerrito Thomp's imp Corona Dist 1.65

LEMONS—
Corwin's fy W S Corwin..... 4.00
Corwin's ch W S Corwin.....3.60

TANGERINE (Halves)
Mahala..... 1.80
Lincoln..... .....1.60
Stag..... 1.35
Liberty..... 1.55
Flower..... 2.10

NAVELENCIAS—
Pointer..... 2.50
Hunter..... .....2.40

ST. MICHEALS—
Alhambra..... 3.65
Poinsettia..... 3.65
Blue Flag..... 3.60

SWEETS—
Blue Flag..... 2.90

BLOODS (Halves)
Holly Wreath..... 1.80
Lily..... 1.75

SEEDLINGS—
Dos Palmos..... 2.95
El Toreador..... 2.75

NEW YORK, April 30.—The market is easier and low. Weather pleasant and warm. Thirty-one cars oranges sold here today.

NAVELS—
Sunflower xfy Cal C U.....$2.95
Geranium xc Cal C U..... 3.20
Triumph ch Cal C U..... 2.65
Gold Sceptre or Rialto O Co..... 2.65
Sunshine fy O Gr Cash A..... 2.25
Trade Mark st O Gr Cash A..... 2.20
Colonel xch O Gr Cash A.....2.30
G. Flower xfy Red O G A..... 2.95
Hawarden Thomp's imp Haw C A 3.25
Dos Palmos xc S Marino Gr P A 2.70
El Toreador st S Marino Gr P A.. 2.05
Eagle Thomp's imp H G Ft Ex.. 3.10
Sweethart xfy H G Ft Ex..... 3.25
Eagle xch H G Ft Ex..... 3.30
Quail xc O K Ft Ex..... 3.25
Ostrich xfy S B Ft Ex..... 2.50
Winner xch S B Ft Ex..... 2.35
Cosmos fy S B Ft Ex.....2.60
C. S. O. st S B Ft Ex..... 3.00
Echo ch S T Ft Ex..... 2.45
Arroyo, st S T Ft Ex..... 2.35
Hummingbird o r Riv Ft Ex..... 2.65
San Fernando (red) San Fer Dist 2.65
San Fernando (green) San Fer D 2.35
Pointer Thomp's imp ACG Ft Ex 3.20
Pointer xch ACG Ft Ex..... 2.25
Butterfly xch Cov Ft Ex..... 2.45
Teal ch Cov Ft Ex..... 2.60
Red Shield Thom imp ACG Ft Ex 2.65
Red Shield xch ACG Ft Ex..... 2.65
Topaz xc Cal C U..... 2.10
Wildflower xc Cal C U..... 2.05
Floral ch S B Ft Ex.....2.75
Rose Thomp's imp Red O Gr A.. 3.35
Clover xc Red O Gr A..... 3.05
Rose xfy Red O Gr A..... 2.70
Clover xc Red O Gr A..... 2.20
Orchard o r Nat O Co..... 3.40
Standard st Nat O Co..... 3.00
Lion Head Thom imp I L Lyon & Sons..... 3.55
Lion Head xfy I L Lyon & Sons.. 2.80
Tiger Head Thomp's imp I L Lyon & Sons..... 3.25
Tiger Head xc I L Lyon & Sons.. 2.50
Fountain ch F H Speich & Co.... 2.55
Santa Fe st F H Speich & Co.... 2.75
Rialto Perfecto Rialto Dist..... 2.65
Old Mission fy C C Chapman..... 2.40
Golden Eagle st C C Chapman.... 2.25
Micheals W T Micheals..... 3.05
Valla Vista fy Hemet Dist..... 3.15
Independent o r Highland Dist.. 3.70
Stock Label st Highland Dist.... 3.25

BLOODS—
San Fernando (blue) San Fer... 3.45
San Fernando (green) San Fer.... 3.05
San Fernando (red) San Fer.... 3.30
Valla Vista fy Hemet Dist..... 3.20

SEEDLINGS—
El Toreador st S Marino Gr P A.. 3.05
Hummingbird o r Riv Ft Ex..... 3.00

TANGERINE HALVES—
Colonel xc O Gr P A..... 1.55

GRAPEFRUIT—
Canna xc S B Ft Ex..... 1.45

SWEETS—
Independent xfy High Dist..... 3.30

CITRUS FRUIT SHIPMENTS.

LOS ANGELES, April 29.—Oranges, 216; lemons, 12. Total to date this season, 16,930 cars, of which 1626 are lemons. Total to date last season, 18,142 cars, of which 1843 were lemons.

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will bring THE FARM QUEEN, a large monthly, for one year. We will also send your name to 100 publishers requesting them to send you a free copy of their paper. Send ten cents today for all the above.

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Pacific Incubator Co.

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10 Young Holstein Heifers
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Clyde J. Moss, Corona, Cal.

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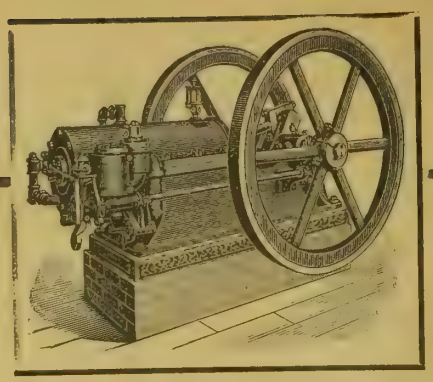

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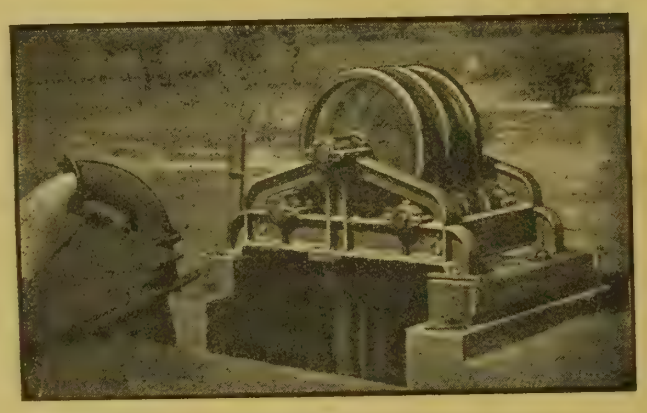
Sunset, Main 1090 Home, Exchange 1090

Addison Double Plunger Pump Head



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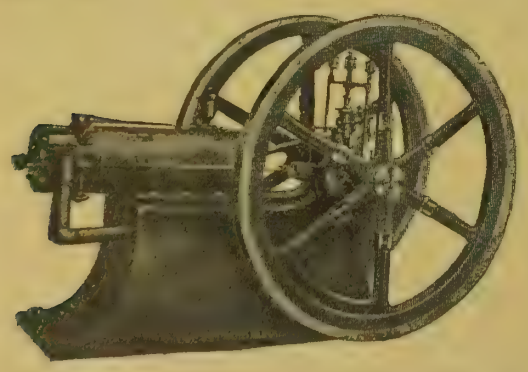
Addison Pump Company

Phones: Home 91; Sunset, Black 1551 **Cor. 1st and Cypress Sts., Pomona, Cal.**



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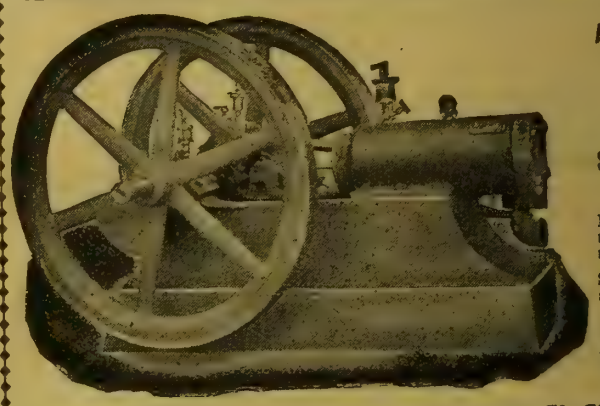

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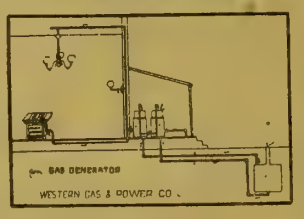

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AUTOMATIC SAFE ECONOMICAL.
Read what Mr. A. W. Foster, President of the California Northwestern Railway has about them:
Gentlemen:
Replying to yours of the 20th inst., I would state that the plant installed for me by the Western Gas and Power Company, on my Hopland Stock Farm, is giving entire satisfaction, and I cannot speak too highly of it. Yours truly, A. W. Foster.
Mr. Foster used an acetylene gas generator before we installed our Western.

WESTERN GAS & POWER CO. 1842-48 Seventh St., Oakland, Cal.

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CA
UNIVERSITY OF ILLINOIS

California Cultivator

Los Angeles May 9 1907 San Francisco

Value of Irrigating Water in California

LESS than a score of years ago water for irrigation was procured in California only by diversion from streams where the task was extremely simple of solution.

As the value and possibilities of irrigation gradually dawned upon our rural residents, more labor and money was cheerfully expended until continued demonstrations forced a rise in land values, because of the immense profits of fruit growing through irrigation, until now it is a question of where only—the outlay of dollars being scarcely heeded, if the desired ends be attained.

Now vast ditch lines and irrigation flumes are carried around the mountains or in tunnels made through them, for many, many miles, and no cost is considered too great if the life-giving fluid can be brought to the parched earth, where our wondrous western climate rapidly transforms our otherwise arid wastes into fields and gardens of marvelous beauty and unequaled profit. Many of these waterways, like one above pictured, are marvels of engineering, winding around the hills like huge serpents of mythologic lore and the waters they carry really work wonders as seemingly impossible as these weird, wild tales so familiar to childhood's impressionable years.

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Waiting for meal of Special Dry Chick Food

If you want to get plenty of eggs in winter, you must start your plans by raising lots of chicks in the Spring.

RAISE THEM ON

Coulson's Special DRY CHICK FOOD

for the first six weeks or so, till they are well feathered, strong and active. Then keep up their continuous and rapid growth by feeding

COULSON'S GROWING CHICK FOOD

This will keep you free from the many losses resulting from improper feeding of the chicks, will bring them rapidly to maturity and will insure you a quantity of eggs in the following winter when prices are high.

Superiority of Coulson's Special Dry Chick Food

Gentlemen:

While in the poultry business I have tried several brands of Chick Foods and find *Coulson's Special* far superior to any other brand. Yours truly,

(Signed) FLOYD W. SCOTT.

Special Offer

Where Coulson's Special Dry Chick Food can not be obtained from local dealers, we will ship, freight prepaid to any railroad station in California, 100-lb. sack for $4, or 200 lbs. for $7.50, cash with the order.

Coulson Poultry & Stock Food Co.

Petaluma, California.

GERMAIN SEED CO., Los Angeles, Distributing Agents for Southern California

California Cultivator

Vol. XXVIII—No. 19 Los Angeles, California, Thursday, May 9, 1907 Subscription $1 a year

Planning a Profitable Cropping System

A Careful Study of Experiments in a Too Much Neglected Line and One Most Necessary for the Best Financial Returns

By W. J. SPILLMAN, Agent in Charge

THERE are two principal reasons why work of this kind is undertaken. In the first place, very few farms have any definite cropping system, and it is comparatively easy to plan a system that will meet the requirements of the case and increase the farmer's income.

We are thus able to render material service to a considerable number of farmers, whose farms in consequence become centers of local interest and serve as object lessons to the community. In the second place, the number of farms on which the full possibilities of a given type of farming are realized is exceedingly small; so small, in fact, that it is necessary to increase the number very materially before many important problems relating to farm management can be solved.

To Illustrate: On the farm of Mr. W. H. Rowe, described in Farmers' Bulletin No. 272, the possibilities of a given system of managing swine with a particular cropping system have been worked out. One litter of pigs a year is produced. These are pastured on clover in summer and fed sufficient grain to bring them to a weight of from 100 to 125 pounds by the end of the pasture season. In winter they are fed grain and soy bean hay. The next summer they return to the clover pasture, while the feeding of grain continues. About the 1st of August they are sold, weighing from 325 to 350 pounds each. This system utilizes the full possibilities of the clover pasture. The extra hogs during early summer consume the abundant growth of clover at that season, while the smaller number later find just about the amount of pasture they can utilize.

With this system the farmer is able to sell an average of six large hogs a year for each acre in clover on the farm. This farm is in the North, where winter pasture is not available. The owner knew just what acreage of each crop to grow, and he knew approximately the quantity of grain and mill feed he would need during the year. This is the only instance thus far found in which a farm devoted to hog raising had its problems so fully worked out.

Suppose, now, a hog farm is located far enough south to make winter pasture available, and that it is desired to produce 200-pound hogs. Fall litters of pigs may be given pasture and grain during winter and early summer, the grain being so apportioned as to cause the hogs to reach the desired weight, say, by the 1st of July. Spring litters may be given pasture and grain till autumn, and then penned and forced rapidly to a weight of 200 pounds.

In such a system, on a farm of a given size, what acreage of winter pasture and of summer pasture should be provided? What pasture crops should be used? How much grain should be feed? These are questions that can only be answered by experience. We are able to make estimates that will serve as approximate answers, but the experience of a considerable number of farms is necessary before these estimates can be relied on.

There are similar questions that need to be worked out in connection with nearly every type of farming for every section of the United States. One of the most important reasons why detailed plans are drawn in this office for individual farms is, to enable us to find valuable material for the study of the possibilities of the various types of farming. Among a large number of plans furnished, some will result in the development of farms to their full possibilities. Every such farm is an object lesson of great value. A large number of such farms would furnish data for generalizations of inestimable value.

The number of distinct types of farming is large, and most farms combine two or more of these types. Even farms of exactly the same type—as, for instance, dairy farms that grow only roughage and buy all the concentrates—may and do have widely different cropping systems. This is true even on contiguous farms of the same type. This field of research is therefore a wide one. It relates in a most vital way to the development of the agricultural resources of the country. If properly pursued it can not fail to result in the accumulation of a vast number of important facts and principles which can be put into pedagogical form and thus become an important subject of instruction in schools.

In attempting to plan a cropping system to fit exactly the needs of a farm, the objection may be raised that this is impossible because of the great seasonal variation in yields. This objection overlooks the fact that every farmer in the United States is actually compelled to make such plans every year, whether they are feasible or not. There can be no two answers to the question whether we shall attempt to aid the farmer in this the most important work he has to do. If agricultural science is of any value at all it must aid the farmer in planning his work.

With sufficient study, the ordinary fluctuations in yields become known quantities, and allowances can be made for them. When a farm is heavily stocked, it will occasionally occur that feed will run short. In such cases the only resource is to buy, unless the farmer is willing to dispense with a portion of his stock It should be remembered that when a farmer is buying feed he is also buying fertility. One of the most successful farmers in this country says: "I usually keep enough stock to eat all I raise, and I usually take the chance of keeping a little more; for it does the farm no harm to buy a little feed if it is needed."

The plan selected to illustrate the methods used in arranging a cropping system to fit definite conditions is one recently drawn for a farm in northern Illinois. The manager had already determined approximately the possibilities of this farm under the particular type of farming he desired to follow. The number of conditions to be met was unusually large. It was desired to keep about 25 cows, 5 to 15 head of horses (some of these to be kept for city owners), 50 to 60 hogs, and 100 hens. It was desired that a farmstead be reserved in the northwest corner of the arable portion.

It was preferred that all the stock should be provided with pasture. At the outset it was plain that ordinary permanent pastures for all this stock would occupy too much land. It was therefore decided to provide more productive temporary pastures. The condition of the land justified the assumption of the following yields: Silage, 9 tons; hay, 2 tons; soiling corn, 7 tons. It was assumed that by feeding 5 pounds of hay or 20 pounds of soiling corn per head daily, the pasture could be made to carry 1 cow per acre.

The Rotations Adopted.

A careful consideration of the conditions specified and of the many different possible rotations led to the adoption of one three-year rotation as follows: First year, 7 acres of corn and 18 acres of peas and oats; second year, timothy and clover; third year, timothy and clover.

This rotation requires that timothy and clover be sown in the 7 acres of corn at the last cultivation, a common practice in New England and a successful practice on several farms in Iowa, Missouri, and other Western States. Timothy and clover are also to be sown either with peas and oats, or immediately after the latter are harvested for hay. The third year of this rotation furnishes the necessary pasture for the cows; the second year furnishes the required 10 acres of pasture for the horses and 15 acres of hay. This will require a temporary fence, which, however, is entirely feasible.

In case the seeding of grass fails, rye may be sown after the corn in the fall, to be followed by soy beans for hay the next summer. If the seeding of grass after the peas and oats fails, winter wheat should be sown on the land needed for horse pasture. This will furnish good pasture throughout the summer, as the wheat will not stool until late in the fall or early the next spring. The remainder of the pea and oat land may very properly be planted to sorghum for hay. The next year the whole 25 acres may be sown in winter wheat in the spring, to be used by the cows for pasture during the summer.

To secure the five acres of clover for the hogs, in a rotation in which the remaining crops are useful, the following three-year rotation was arranged: First year, corn, in which clover is sown at the last cultivation; second year, clover; third year, peas and oats for hay, followed by rape sown in midsummer.

This rotation permits more rape to be grown than is strictly needed, but the extra quantity can be utilized by the pigs and calves.

If the seeding of clover in the corn fails, sow winter wheat in half of it in the autumn. Pasture this wheat down the next spring, and follow it by sorghum for hog pasture, turning the hogs in on the sorghum when it is about 18 inches high. The other half of the land should be planted to winter wheat in the spring. This will furnish good pasture for hogs throughout the summer.

These two rotations occupy 90 acres of land, and furnish 12 acres of corn, 38 acres of hay, 5 acres of rape, and all the pasture needed. There are still needed 5 acres of corn and 7 acres of hay. Reserving 3 acres for the farmstead, 10 acres on which to grow these crops are left. The evident solution of this problem lies in a two-field rotation of corn, 5 acres, followed by a double crop of hay the next year.

Continued on Page 500

TREES

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Deciduous Fruit Culture

By J. W. MILLS

POOR NUTS.

ASIDE from the fungus diseases that attack California nuts, there is perhaps nothing that makes a poor grade of nuts as lack of water at a certain period of development.

This is particularly true of the almond. A shortage of water will not only prevent the present crop of nuts from making full and plump kernels, but it shortens the coming crop, barring accidents which might also shorten the crop. It has been our observation that when almond trees were sufficiently supplied with moisture to allow them to form considerable new growth and set a good many buds on the inside spurs while the trees carried and matured a crop, the trees would bloom well and set a crop the following year. It is simply a question of keeping the trees growing.

We have noticed that when the trees stop growing before the nuts ripen, the present crop is not only injured, but the bud development is so retarded that no crop for the following year can be possible. The year that follows with little or no crop is free to make a good growth because there is no crop to mature and as a result there is a year of light and heavy crops or a heavy crop followed by no crop at all.

It is commonly thought, or used to be by many, that the almond and olive would flourish and be prolific on land so dry that other fruit trees would not mature crops on them. This idea is fast being corrected. It has been noticed that the almond in particular bears better year in and year out on moist land that is more subjest to frosts, than dry land which is more favorably situated in respect to frosts. This demonstrates the great importance of irrigation when nut trees are planted on land not naturally moist. The California walnut, the pecan and in fact all nut trees are naturally deep-rooted. This would teach us that if they do require an abundance of moisture, irrigations must be long and thorough to do any good. The water must go down to get to the trees.

Poor land will not make good, plump nuts. They are very nutricious fruits and they must get their richness principally from the soil, and if the soil is poor, the nuts will be poor. The larger percentage of the mineral elements that enter nuts is used up by the husks. If these are returned to the soil the supply will not be so quickly exhausted. Eight to ten pounds of a well balanced fertilizer per tree for a full bearing orchard is not a heavy dose.

NEW GRAPES.

Within the last few years new varieties of grapes have been introduced that have proven favorites in the various parts of the country. Still there are so many varieties and they grade into one another so gradually that really there is not so great an acquisition in any of them as is generally supposed.

The Pierce grape, for instance, is a very fine grape in its class, but there are many varieties that are equal if not better. The Millennial is another new grape brought out quite recently with favorable reports. It is not a new grape, having been discovered in Hungary in 1887 and introduced into California two years later, but it was not widely distributed until recent years. It is being grown on trial in the Imperial valley as a shipper for the early market.

McPike is another new grape for which must be claimed. At this time nothing has excelled the Malaga in the desert sections for an early shipper. It produces well, it is attractive and has a good flavor. Perhaps more of this variety will be grown in that section than any other kind, though some others are very promising, especially Purple Damascus.

PEAR BLIGHT.

While discouraging reports are heard about the pear blight which has wiped out so many orchards in this state and which will destroy many more, there is one grower in the Sacramento valley who has been successful to a high degree. He has considerable acreage in the Feather River bottoms in Yuba county. Mr. Howard Reed has this orchard and has treated it after the directions of the pear blight investigators who were sent out from Washington. He was rewarded last season with a fine crop of fruit and his trees seemed to be in a healthy condition. If these conditions prevail with him this season, it will demonstrate that the pear blight can be controlled.

FARM AND ORCHARD WORK.

In our California climate the years roll round so quickly that one season seems to be merged into another. We have no distinct dividing line as they have in most civilized countries, and no weary waiting for the season to open to resume interrupted operations. Even our rains are oftimes a relief as affording a much needed rest.

This has its advantages, but it also has its drawbacks. To the young man ambitious in making a start it enables much to be accomplished, as the season for every kind of work can be extended over a much greater period, with but few interruptions from inclement weather. For instance, our planting season for deciduous trees, including preparation of the ground, easily extends over four months, or say from the first of November to the end of March, and may sometimes be successfully done in April. While again, orange tree planting may be done any time during the active growing season. In like manner, farming operations can be carried on successfully over a greater portion of the year. The advantage is with the ambitious, struggling beginner. The drawback is that it, in a manner, deprives us of all leisure as the climate gives such a bouyant feeling that too much is apt to be attempted.

April ushers in the growing season, and is apt to crowd a great deal of work into a short time, unless the orchardist has been beforehanded and has not set himself too much of a task.

When the ground has been run together and packed hard by the copious rains of the winter, if it has been by any means neglected until April, it will be hard to get it into a desirable state of cultivation, so as to retain the moisture beneath the surface. It will be found that the evaporation from all sun-baked surfaces is much greater than where it is covered by a coating of weeds or other vegetation. Unless there should come a more generous rain than can usually be expected in April, but little can be done except to run furrows for irrigation where water is to be had, and it is presumed that no prudent orchardist would be so neglectful as to miss the opportunity of conserving the moisture by occasional cultivation.

The writer has had as good success in previous years where grass and other vegetation was left to grow until nearly mature and the surface moisture mostly gone—then, if not previously done, furrow, irrigate, then plow thoroughly but not too deep, in the orchard, and bury everything in the shape of vegetation. If plowed at the right time the ground will turn up very mellow and will retain its moisture for a very long time afterwards. This looks slovenly during the winter, where the aim of many of our orchardists seems to be to keep everything in the line of vegetation from sprouting. But the writer makes the prediction that the scarcity of coarse vegetable fertilizer will compel such methods as this to be pursued in order to keep the proper amount of humus in the soil, which cannot be supplied by any commercial fertilizer, and which cannot be properly utilized unless the ground has a proper quantity of humus.

Deciduous trees can, in an emergency, be planted as late as April, provided the trees have been properly heeled in and have started out to grow in a vigorous and healthy manner, but great care must be exercised to keep the little rootlets that have started from dying out. The roots should be puddled and kept moist from the time they are taken from the nursery until planted. Immediately after planting, irrigation or watering by hand from barrels on a sled or wagon is necessary. In this way, for a starter in a family orchard, a year's growth may be saved, which is worth a good deal to a new settler on vacant lands.

FERTILIZER LORE.

I notice an article in your issue of April 4 wherein the writer says: "One may rest assured that he pays too much for the brand of low value, instead of too little for the brand of higher value."

I judge from this somewhat ambiguous remark that the average fertilizer manufacturer, according to the writer's notion, is overcharging for his goods. This is not by any means the case. Fertilizers, taking into account the cost of labor, transportation of materials, etc., are as cheap here as it is possible to make them and make them good, and how good the average fertilizers are that are sold here and their value to a cent, any one can see for the expense of a one-cent postal to Berkeley for the semi-annual bulletin. By the way, I might mention, en passant, that the fertilizer manufacturers of Southern California, and especially the A.C.W., were instrumental in obtaining the fertilizer law, and the publishing of the bulletin of fertilizer values. I say the manufacturers did this of their own volition; furthermore, they have helped to increase the citrus and other crops many thousands of carloads by good, practical work done in the field, and that various firms have certain formulas that are adapted to certain conditions, no practical man can deny, experiment stations notwithstanding.

It was the custom in the past for some experimental stations to discourage the use of commercial fertilizers, possibly with the best intentions, but the grower who does not use commercial fertilizer is the loser now; and another fact is that the fertilizer man who takes an interest in and is making a success of his business knows more the requirements of a grove than the grower, for the reason that the fertilizer man sees one hundred groves and one hundred different conditions where the average grower's observations are much less limited.

Complete fertilizers cannot be purchased on the unit basis, for the simple reason that a fertilizer of a higher unit value does not always give the highest agricultural value in the field. Many times a grower could afford to give more money for the lower unit value, because the composition and source of plant food suits his particular crop and soil.

Remember this as an infallible rule, that the commercial or unit value does not always designate the agricultural value of a brand of fertilizer.

The article advises all growers to buy on the unit basis, but then says: "It is not intended to discuss here what materials are best suited for various crops under various conditions, but to suggest to the buyer of fertilizer that they should know what they want and then go to the fertilizer dealer to supply their wants." Thus admitting what I contend, that certain mixtures and combinations are better than others under certain conditions.

The article also says the brand or name for what the manufacturers think is best suited for the crop for which the brand is intended, or else it stands for what the manufacturers wish the farmer to think is best suited for his crop in order that the manufacturer may dispose of, at best advantage to himself, fertilizing materials on which he has a corner, or which he can procure on more favorable terms than others. This is casting a direct slur on the integrity of the fertilizer manufacturers, who with no help from the stations and in spite of such articles as referred to here, flourish. Why? Because their business is to do the best they can to help the grower to get crops. Make him crops, and you sell him fertilizer; show no results, and you don't. That's all.—H. E. C.

TUSSOCK MOTH POISONING.

The fact that the tussock caterpillar is not readily poisoned by arsenicals has been alluded to in the opening paragraphs of this bulletin. It was hoped, however, that some method of application might be discovered which would prove successful as a means of control.

Some laboratory experiments were conducted in 1905 with this end in view, and it was found that the newly hatched larvae were more readily poisoned than the more mature insects.

Arsenate of lead was the material experimented with. When the foliage was thoroughly covered with this insecticide applied at a dilution of three to six pounds to fifty gallons of water (the wet weight of the material as taken from the keg,) and newly hatched larvae were placed upon it, the majority of them died from arsenical poisoning; but even then some survived and only succumbed after prolonged exposure to thoroughly poisoned leaves. Slightly older insects were found to be extremely resistant; some survived four weeks, when their only food was leaves literally whitewashed with arsenate of lead. These larvae ate but little, and doubtless died from the combined effects of starvation and arsenical poisoning.

It was then evident that even early spraying with heavy doses of arsenate of lead might not prove successful, for, added to the resistance of the insects would be the difficulty of keeping the rapidly expanding foliage covered with poison. The feeding habits of the young caterpillar were also against success, as they worked largely on the buds and blossom clusters, which were very difficult to cover with spray. Also, the frequent rains that occur in the early spring tend to render spraying ineffective; and, last, but not the least important, the prolonged period of hatching, which covers nearly four months, is against the success of such a spraying campaign.

Notwithstanding all the apparent difficulties, some early spraying experiments were undertaken this spring, notably in orchards of Messrs M. B. Tuttle and R. W. Eaton. Spraying began in the Tuttle orchard on March 8, and continued, owing to delays caused by the rain, for about three weeks. Arsenate of lead was used at the rate of three pounds to fifty gallons of water, and the trees were thoroughly sprayed. The caterpillars were hatching abundantly at this time, and there were also a great number of larvae which had passed the first and even the second molt.

Spraying in the Eaton orchard was not commenced until March 29. Here 5-5-50 Bordeaux was used, with three pounds of Swift's arsenate of lead to fifty gallons of the mixture. The trees were still in blossom at this date and the tussock-moth larvae were yet hatching abundantly, but many of them were in more advanced stages than when spraying was commenced in the Tuttle orchard. The spray was thoroughly applied in each case and many young larvae were killed, but the treatment did not obviate the necessity of treating the trees several times later, in order to prevent their defoliation, and, in spite of all efforts, the fruit was badly damaged.

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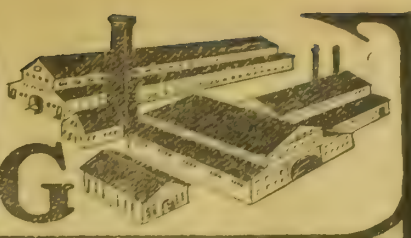

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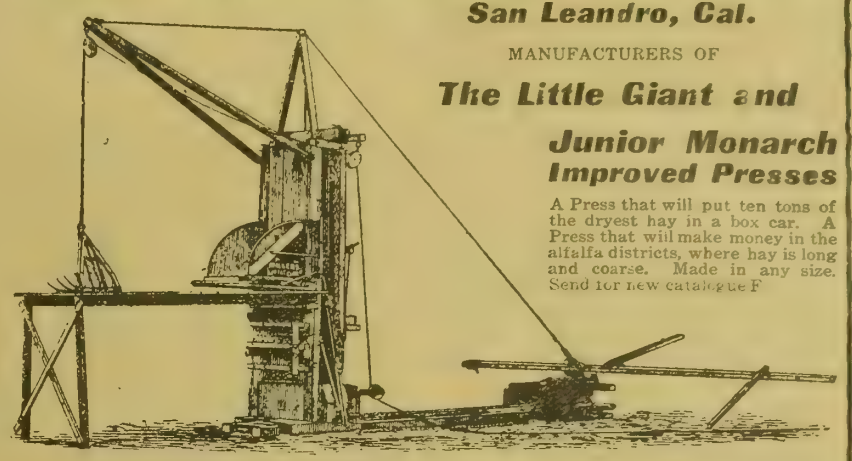

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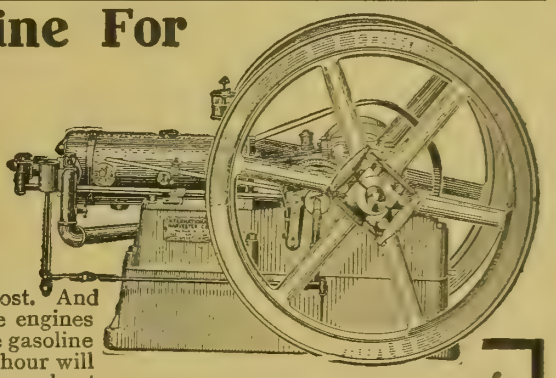

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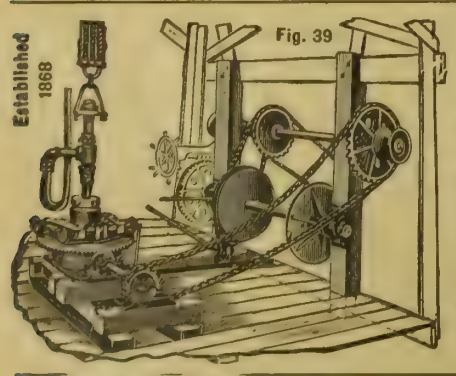

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BUTTER MAKING.

IN the Bible in the triumphal song of Deborah the value of butter making is mentioned, for when Sisera asked Jael for water she brought him a cup of milk and a lordly dish of butter. Then after gaining his confidence by her generosity drove the fatal nail through his head. A cup of cold water is spoken of as the least of simple kindnesses that one can give to their fellow man. A cup of milk in many countries is a high mark of regard, while a dish of butter is recognized as a dish to honor a king. Water—Milk—Butter. The relation is still more intimate than we think. Water, first. I feel you are all smiling to think of water in the milk question. The watering of milk by direct turning the water into the milk is almost a thing of the past. The only way left is to water the milk through the cow. Prof. Cook used to give his cow a gallon or two of salted bran tea to help out the milk flow.

Capital in Dairying.

In late years the money made in dairying has attracted the capitalist until the small dairymen are being swept aside rapidly. The modern sanitary dairy requires a large outfit of tools and appliances. The old time dairy outfit consisted of a few cows of no breed, a corral to milk in, a few pails and cans, a strainer and a milking stool to sit on or to comb the cow into submission as was needed. This was a full outfit. Now we have cows of a dairy breed, a sanitary barn, a cooling apparatus, covered milk pails, brushes for the cows and a steam boiler for sterilization of the pails, cans and other utensils. Other wrinkles that the local health officer thinks should be used; these change with each administration.

Water.

The water used in washing milk pails and cans has been known to carry pathogenic bacteria with it, giving rise to typhoid and scarlet fever. This, however, is aside from our subject today. The bacteria in the water we wish to talk about is that which gives rise to taints in the butter, the water the butter is washed with may ruin it for eating purposes though it may not be injurious to the health of the consumer. The large creameries, when the cream in the vat becomes tainted, pasteurize it and use a commercial starter for a few times and escape some of the more serious troubles that the small butter maker must meet. They can make a butter that will hold its own until sold at least.

Export Butter.

The butter made from ripened cream is the popular butter in the United States. When the creamery men were newer in the business milk was often received that should not have been taken in at the creamery doors. From it good butter could not be made. After these troubles passed the time came when butter fell in price until the Government concluded to help by making a series of experiments in exporting butter to other countries. A number of shipments were made to different parts of the world. It was then discovered that some butters kept much better than others. That the butter was good at first was shown in that none that scored less than 95 was sent out. It all went in cold storage and all had nearly the same treatment. The cause was discovered to be in the growth of bacteria that produced the disagreeable flavors.

Experiments.

Bacteria was then purposely introduced into the cream and also into the water to wash the butter.

In one lot too much butter milk was left, in another lot the churn and pails were not scalded. The results were compared and it was decided that water and temperature had more to do with the butter being bad than anything else.

At the Kansas State Agricultural College the butter was still further investigated, the results are given in full in Bulletin No. 138. This is an interesting bulletin and will repay careful study for creamery managers. I will try to tell you about the part of interest to us. The water used in the College Creamery is from the regular supply and is pumped from a well sixty feet deep and flows into a reservoir. The water used was all from this well and tank excepting that which came from the melting of ice. The ice used was manufactured and sold in the town by a regular ice company.

Testing the Water.

The samples were numbered from one to six and tested as follows:

1. Pasteurized, filtered, cooled. Tem 35. Bacterial count 10.
2. Pasteurized, unfiltered, cooled. Tem. 40. Bacterial count 40.
3. Pasteurized, unfiltered, cooled. Tem. 60. Bacterial count 1050.
4. Pasteurized, hot, unfiltered. Tem. 188. Bacterial count 50.
5. Pasteurized, hydrant. Tem. 60. Bacterial count 120.
6. Melted ice water from refrigator. Tem. 49. Bacterial count 800.000.

These tests were carried on from month to month, they vary according to the weather, while it was shown that the bacteria multiplied most rapidly in hot weather. The filtered water when the filterer was new was at its best, at first it removed from a quarter to a half of all the bacterial contents. Later the filterer failed to remove them all, and still later it became a source of contamination.

Temperature.

The raising of the temperature of the water also increased rapidly the number of bacteria present. When the butter was washed with sterilized water it was found to sell better, from one cent to three cents per pound than the butter from the same churning when washed with unsterilized water. It was concluded that temperature of forty or fifty degrees retards the development of bacteria and reduces those in the water from one-half to a quarter. The water used for washing butter should be sterilized, cooled and used at once and not allowed to stand around to collect a lot more bacteria.

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As we have dispersed our herd, except a few heifers for home use, we are forced to offer for sale this valuable sire. We will sell him at a low price to a breeder who is in a position to give this bull a chance to make a record.

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A filter that has not the sand and charcoal renewed at frequent intervals is a source of contamination. Wooden tanks are often alive with bacterial growths. The drippings of ice water are saved in many places to wash the butter. They are unfit for the purpose.

Lactic Acid.

The lactic acid bacteria, or as it is scientifically called B. acidi lacterci, Nos. 1 and 2 and B, lactic aeroenes.

These common lactic forms are not numerous in fresh milk but at 70 degrees develop with great rapidity. The commoner classification of milk bacteria is made by the way they act on the gelatines. These are called the rapid and the slow liquifiers. Every cook has had the gelatine she made for her dessert fail to be firm, and has had it turn to liquid after half stiffening—this is bacterial, often caused by placing the gelatine at an open window where the dust laden with bacteria has struck it.

The so-called rapid liquifiers are relatively few and the active lactic acid bacteria soon destroys them. If they were left alone they act on the protein of the milk and produce putrefaction. This is the reason why milk may be kept at a low enough temperature to keep the lactic acid bacteria from acting, or as we may say keep from souring and yet be unwholesome, yes, even poisonous from the ptomaines that the bacteria have produced as the results of their life processes.

The Other Kinds.

The bacteria that are slow to dissolve gelatine are the producers of enzymes. When these are in any quantity the milk is not fit to use as the cause is filthy, dirty cows and stables and milk vessels that are not scalded.

The worst of those that trouble the farm butter maker is the slimy ones that grow in stagnant water. These are often brought into the milk pail from the dried dust clinging to the cow's udder. The cow's delight is to stand in water. This bacteria has also been found in the wooden tanks used on many farms to hold the water pumped up by the windmill.

I have known farmers' wives whose butter had commanded a high price that suddenly met a Waterloo in a dose of this bacteria. The containers of the milk were all kept in the best manner possible as well as the cows and stables, yet the butter was not to be eaten. One case I told you of last week where the stone jar used to hold cream was at fault.

The Farmer's Wife.

When a woman has always made good butter I know of no greater humiliation than to have every churning go bad and from no apparent cause. If it does happen the first thing I should do would be to have the meadows looked over and if there were any pools have them fenced up so that the cows could not wade in them.

Then examine the watering troughs at the barns, and as a precaution have them whitewashed inside. At the house have the water tank cleaned out and whitewashed inside. There is something else that perhaps you have never thought about. That is the amount of dust that blows into the uncovered tank. Make a cover out of cheese cloth, sew it together and if the tank is a wooden one it can be tacked to place.

If the tank is metal then sew a lot of burrs to it; these iron burrs are cheap and useful for weights. The dust and dirt that falls into a water tank as well as the moths, sometimes a bat or an owl is found drowned; the death may be as tragic for the household as it was for the owl; these the cloth will keep out and yet the air will be allowed to penetrate, for unaired water soon becomes foul.

Clean the cows and whitewash the stables, then give the milk vessels an extra scalding for luck. Then go to your neighbor and beg a little good buttermilk or good cream, and add it to your cream twelve hours before churning time. If this last seems to you unnecessary—DO NOT FAIL TO DO IT. I had for some years to help the other creamery out here with the skimmed milk and buttermilk, for they were making their butter from all kinds of milk while I had just my own two hundred and fifty cows' milk to handle. It will do it every time by starting a good bacteria from a clean source to take the place of the bitter, rancid producing one from an impure source.

MULE BEATS HORSE.

While the horse goes on kicking holes in the sky with prices that make one's head swim, his modest half-brother is breaking a few records himself.

An increase of 5 to 10 per cent. in the volume of trade in mules is shown for the year 1906. As in horses there was a record-breaking demand, and more mules were shipped South than ever before so far as there has been any record kept on the business.

The Kansas City, Mo., market reports showed a very substantial gain over 1905, and values held wonderfully steady throughout the year. The receipts were not only increased, but the outlets of the Kansas City market were enlarged.

A very significant feature was the enormous demand for mules for railroad work. This fact has been forcing itself upon the attention of dealers for several years. It was thought that this demand had touched the highest point in 1905, but the demand was even stronger last year and the 1905 record was smashed. The construction of railroads last year was heavier than the year previous, to which fact may be due the increased mule demand. The shipment of mine mules also surprised the natives.

Just at present hands are reaching out from all quarters for the coveted mule. It looks as if they will go on reaching out. There seems not a single indication that does not point to the fact that the record of the present year will even surpass the remarkable demand of 1906.—D. R., in Farm Progress.

SCRUB FEEDING.

You may have the best cows in the world, but if you do not feed and manage them properly they can never be made to pay. One advantage of having pure-bred cows is that it leads one to practice pure-bred feeding. There is such a thing as scrub feeding as well as scrub stock. When a person gets a good cow he is much more likely to take good care of it than he is of a scrub.

Cream Separators, all sizes, all prices. See O. J. Weber Co., 555-557 So. Los Angeles St., Los Angeles.

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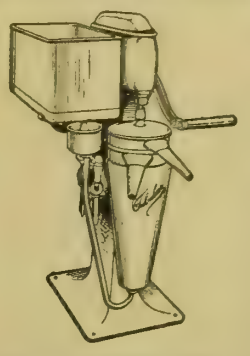

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The Ornamental Garden

By ERNEST BRAUNTON

GARDEN OF GETHSEMANE.

THIS is the scene of so many events forever memorable in the history of our race, the battle ground and point of attack alike of the Assyrians, Romans, Saracens, Crusaders and Turks.

The walls of Jerusalem with the dome of the Mosque of Omar upon what is believed to have been the site of the Temple, form a pleasing background to the picture, while under the walls is the Mohammendan burying ground, whose turban surmounted tombstones mark the last resting place of the male of this turbulent race, while that of the poor female is simply capped with an insignificant ornament, the whole place bearing a look of neglect and totally devoid of trees.

The time of day usually selected to visit this spot is toward evening, when the red light of the setting sun glances over the city, touching its domes and minarets with a last dying gleam and the dreary hills are broken into grand masses of purple and vermillion, while the glen below the valley of Jehosaphat, where is the dry bed of the brook Kidron; here sleep millions of the sons of Isreal almost side by side with their enemies, the Moslems, for both believe that the last judgment is to take place here, and in places it is fairly paved with the sepulchers of the Moslem or the simpler slab of the Jewish tombs. And the place of the sad groves which shrouded the agony of Christ are sinking into the shades of night. If we climb to the top of the hill and look eastward we see over the far horizon the mountains of Moab and the valley of the Jordan with the Dead Sea and the desert glowing in the sun's last rays; this completes the indelible impression a scene that for its association is unequaled in the world.

And the picture is remarkable chiefly for these suggestions of the past, for horticulture is not encouraged in the dominion of the Sultan, and only a small fraction of the arable land is under cultivation, owing to the absence of roads and the pernicious practice of farming out the taxes, which, in its practical workings, is a most ingenious and pitiless system of robbery.

The Garden of Gethsemane has but few trees; we recognize the cypress and the olive, two or three of which are very old but as we read that Titus cut down all trees about Jerusalem and that a legion encamped at the foot of the Mount of Olives, it would suggest that they were planted by Christian hands to mark the spot, unless, like the sacred olive of the Grecian Acropolis, they may have reproduced themselves; this in spite of the old tree in the picture, the so-called "Tree of the Agony."

The trees themselves remind one of the celebrated cedars of Solomon on Mount Lebanon in the disproportioned hugeness of their venerable trunks and to their foliage above. For ages the pilgrim has knelt and kissed them with tears, carrying thence a few of the scattered fruit or a portion of the bark to remind him of the spot.

The garden is surrounded by a high stone wall, a broad path leading around its entire area, while the portion containing the trees and flowers is protected by an iron railing with sharp pickets. The interior is subdivided by numerous wooden fences with no apparent reason.

Many plants in pots are employed to set off these spaces with the purpose of frequently changing and ensuring a constant bloom. The flowers are chiefly annuals. Daisies and hollyhock are prominent. The whole is extremely formal and devoid of beauty, but presents an abundance of color, which pleases the throngs of pilgrims who cheerfully pay the entrance fee to worship at the various shrines and who frequently form a continuous procession through its walks during the daylight hours.

The olive is still scattered about the Mount of Olives and a few half cultivated figs and pomegranates assist in recalling the past, It is through the branches of these trees that the more picturesque views are seen and we think of the time when these terraced hillsides were once clothed with verdure, but now denuded even of their soil; thus has the oppression of the unspeakable Turk peeled the land that once "flowed with milk and honey."

FLORICULTURE.

What are flowers good for? What could they have been created for, is a question that we hear repeated from youth to hoary age.

To the great mass of people who propound such an interrogation, the flowers may be spoken as noxious weeds; as plants good for nothing. Then as we begin to rise in the scale of manhood, we can begin to think of framing an intelligent answer—that flowers are good for pestiferous goats to eat.

We, who attempt to cultivate flowers in the city, where we are sure manhood is developed as far as the goat element, can postively affirm that we know flowers are good for something for goats to eat. We have frequently such positive and ocular proof that flowers were not formed in vain, that we can say positively that we do know that flowers are good for something.

Advancing a step beyond this position, where sight is lost in faith, we tremblingly suggest that flowers were not formed in vain, because they are beautiful. There is power in beauty. Therefore the tiniest flower that blossoms in the noonday sun is a thing of power.

The Creator has numerous forms of power, and the beauty that responds to an educated eye from the petal of many lines is a power that can move the world. There is beauty in a crystal teardrop; and it is balanced only by a mighty "power behind the throne." There is beauty in the glowing sunbeams, and who can compute the power thereof? "A thing of beauty" has not improperly been called "a joy forever."

IT'S PENNY WISE.

Policy to set out a good tree, costing good money and then let the sun burn the bark or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Manufacturing Company, 2124 Willow St., Los Angeles.

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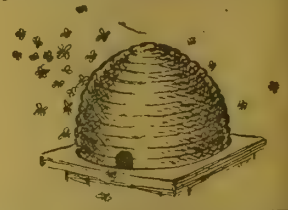

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The Vegetable Garden

By ERNEST BRAUNTON

VEGETABLE GARDEN POINTERS.

NO weeds should at any time be allowed to mature seed. If this is carefully attended to, there will be in one or two years quite a decrease in the number of these pests.

Rotation should be practiced with system in every garden; not alone for the soil's recuperation, but also to lessen the attacks of insects and fungous diseases.

The various vegetables, whether grown for market or home use, occupy the soil different lengths of time, making it possible to produce half a dozen different crops each year, for in California, by proper fertilizing, we may keep the garden filled.

ROTATION OF CROPS.

Dr. Oemler, in "Truck Farming in the South," in discussing rotation of crops, says:

"Neither the areas nor the varieties of crops of the truck farmer are sufficient to enable him always to practice regular courses of rotation; nor should a lack of manure ever compel their strict observance, but he should aim:

"First—To have a crop which succeeds another as dissimilar in composition and the demand it makes upon the soil as possible.

"Second—Never to have plants of the same family succeed each other. For instance, melons should not follow cucumbers, tomatoes should not follow eggplants or Irish potatoes; beans should not succeed peas, or vice versa.

"Third—Tuberous plants should not be allowed to follow plants of the same character.

"Fourth—Roots should not succeed root crops, as turnips, beets, etc.

"Fifth—Deep or tap-rooted plants should succeed others of dissimilar growth.

"Sixth—To make the heaviest application of manure to such crops as require most, as cabbage, onions, etc., and have other crops succeed these requiring less, as tomatoes, eggplants, etc., so that the whole farm may be gradually brought to the same degree of fertility."

Other benefits of rotation are the destruction of noxious weeds and paracite fungi and insects.

TOMATO CULTIVATION.

Cultivation should begin soon after the plants are transferred to the field. If both the rows and checks are straight, plow cultivation will be facilitated, leaving but little for the hoe. A 24-inch heel sweep will do the work admirably, as such an implement can be run nearer the plants than any other without bruising.

The wings of the heel sweep extend over the vines and after they have spread over a portion of the row, stir the soil and destroy the weeds where no other plow can reach without injury to the vines. It leaves less work for the hoe, and at the same time gives level and shallow cultivation. The roots of the vines should not be broken, particularly after the first blossoms appear, but shallow cultivation should be continued until the first fruit ripens, and after, if the soil threatens to become dry or weeds appear.

CABBAGE SOIL.

The cabbage is a gross feeding plant and requires a rich, deep and mellow soil heavily manured to produce the best crops. A mellow loam with clay sub-soil is preferable, but sandy loam will give a good crop. Good drainage is essential, and particularly to the early spring crop. Heavy lowlands, no matter how fertile, rarely produce a good early crop, nor is new ground good.

The average garden soil that has for some years been in a high state of cultivation will produce a good crop. A slight northern exposure will frequently give better results for the extra early crop than a southern, as the former is not subject to such marked changes of temperature. Deep and thorough preparation is as essential as an abundance of plant food and good cultivation. Rotation is necessary, and cabbage should not occupy the same soil twice in succession, nor should any plant of close botanical relation be grown on the soil in the meanwhile, such as cauliflower, mustard, kale, etc.

ONION SOIL AND ITS PREPARATION.

The best soil for onions is well drained, sandy loam with clay subsoil, and containing an abundance of humus. The field should be nearly or quite level, and freed from all roots and trash. Soil that has been under high cultivation for a number of years is preferable.

No matter how fertile the field may be in its owner's estimation, he cannot expect the best results until it has grown onions for several years, and in the meantime kept free from all weeds and heavily manured for each crop. As onions may be grown on the same soil for any number of years, and under equal conditions, will each year give a better yield, it follows that this crop should be an exception as regards rotation of soil.

A rotation of manures will be needed, however, and particularly so if commercial fertilizers are used to any considerable extent. This rotation is secured by either stable manure or green manuring, or both, when commercial fertilizers have been extensively used and vice versa. As the onious are harvested in June or early in July, ample time remains for a crop of cowpeas to be grown and plowed in, and the soil prepared for the fall sowing of seed.

It is of the utmost importance that the land be plowed, harrowed and rolled (and raked if necessary) until it is brought to the best possible condition. The manure which has been so manipulated to free it from all lumps and litter is evenly distributed broadcast and worked into the soil. The preparation should begin some weeks before planting time, that there be no mistake as to its being properly done. Clean culture the previous year will be a great saving in the preparation and cultivation of the next crop.

The peach crop about Salinas is very spotted; good yield reported in some orchards, while in others the outlook is very poor. Taken altogether, estimates run all the way from 25 to 40 per cent. of a crop. Hill orchards are showing up far the best

TOMATO TROUBLES.

The use of the Bordeaux solution proves an effectual means of holding the tomato leaf blight in check.

In 1896 spraying with Bordeaux solution four times produced, with 35 varieties, an average increase in yield of 2.5 tons per acre of marketable fruit.

In 1897 spraying with Bordeaux solution three times produced, with 19 verieties, an average increase in yield of 2.2 tons per acre of marketable fruit.

Some varieties are more susceptible to the blight than others. In 1896 all but one variety, and in 1897 all but three varieties gave an increased crop of ripe fruit as a result of spraying with Bordeaux solution, and all of the varieties showed an increase when the amount of green tomatoes at the end of the season was added.

The increase in crop as a result of spraying, ranged from 1-4 of a ton to 6 tons in 1896, and from 1-4 to 4-1-4 tons in 1897.

THE RIDDLE.

Life may be a riddle—
Half a dream and doubt.
But the music's in the fiddle
If you just can get it out!

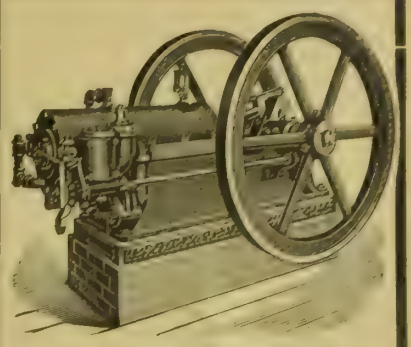
Anyway you take it,
Life's in your control;
World's just what you make it,
So—let the music roll!

Hear those bells a-ringin'
Best that they can ring?
Hear the sweet birds singin'?—
Follow suit, and sing!

Out of fifty-three samples of milk seized in a recent raid, thirteen were reported on unfavorbaly at Thursday's meeting of the Board of Health of San Francisco.

A husband may forget the bird
When wifey leaves the city;
But seldom does the lonely man
Forget to feed the kitty.

'Twas overstudy ailed the star,
The paper said, but when
Her understudy made a hit
She got right well again.



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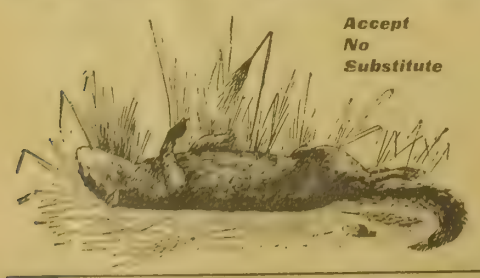

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California Horticulturally

By JOHN ISAAC, Sacramento, California

GOOD FRUIT TREES.

WHILE, at the present time, there is every reason to look for a fair to good crop of deciduous fruits, information from Eastern fruit-growing sections rather indicate that there will be a good d mand and good prices for all that California may have to sell. There have been very heavy frosts over a great part of the East at the time when the blossom buds were swelling, and it is reported that the losses will be heavy in consequence, and that little fruit will be produced this season. This means that California will be called upon to supply the shortage, and that our fruit growers may look for a prosperous season. Of course, we sympathize with our Eastern orchardists, but at the same time we are glad that we are all right and will have fruit to sell.

NO CHANGE IN HORTICULTURAL LAWS.

Of numerous horticultural bills introduced in the last Legislature, but one, that defining the length of the official life of the county horticultural commissioners as two years, received the Governor's signature. The one raising the compensation of the local inspectors from $2.50 to $3 per diem passed both houses, and, it was thought, would become a law; but it failed to receive the Governor's signature within the alloted time and so perished. All the horticultural laws remain as heretofore, therefore, with the exception that the county commissioners have a tenure of office for two years instead of for an indefinite term, as heretofore.

DESTRUCTION BY DREDGER MINING.

There is a growing distrust of the dredger miner in the upper country, and an inevitable conflict between him and the agriculturist looms up in the future. It is a sickening sight to the man who is not profiting thereby, to see beautiful and productive farming land destroyed for all time, and piles of unsightly cobbles left where orchards and vineyards throve. The gold that is removed from the soil leaves the State, but the rock piles will remain forever, and farming land which might be profitable to future generations for untold time is left a barren waste. For the immediate gain of a few moneyed men, future generations are being despoiled of their rights, the State is being deprived of taxable property and the State is loser in every respect. Dredger mining is more desructive than hydraulic mining, and that has been stopped.

THE FIRST CHERRY SHIPMENT.

The fresh-fruit shipping season has opened and, as usual, Vacaville is in the fore with the first shipment. This consisted of a box of cherries grown by T. Lee Gates, and it was forwarded through the Fruit Distributors on the 23d inst., about two weeks later than the first box shipped last year. The first carload of cherries will go forward in ten days or two weeks.

LOWER FREIGHT RATES.

Deciduous fruit shippers have been favored by the railroads this season by a reduction in freight rates on fruit of ten cents on each hundred pounds. The probable shipments of fruit from Northern California during the present season will, it is estimated, amount to about 7000 carloads, and this reduction will average $25 for each car, or a total of $175,000 for the season. This is an important item saved to the fruit shippers of the State.

PLANT BREEDING.

A correspondent of the Southern Agriculturist says:

"No single line of investigation is receiving more attention at present than plant breeding—the improvement of domestic races of plants by crossing and selection. The general public had failed to recognize that, making allowance for certain well defined differences in structure and manner of life, plants respond to the same basic laws of reproduction that apply in animal breeding. We had regarded the occasional appearance of a new plant as something fortuitous — beyond control. Then came Burbank. And the magazines told such marvelous stories of his methods and results that we were in a fair way to imagine that the result of every cross, accidental or studied, would give to the world a new horticultural wonder.

Very few men become famous either as plant or animal breeders. The Durham cattle long have been a popular beef brand, and doubtless thousands of men have studied the type and worked carefully with it; but Bates, Booth and Cruickshanks are the names suggested when the Shorthorn is mentioned. Plant improvement is in a way more recent, and the men who have succeeded in it are so few that a great leader will be regarded as a wizard. The world has only known one Burbank, but there are in America today a number of careful plant breeders, and the sum total of their work means far more to the agriculture of the country than the productions of the great Californian. For they are not only endeavoring to produce valuable new plants, but they are patiently studying the laws on which all plant improvement rests, and they are giving widespread publicity to this fundamental knowledge. Haves and Hopkins and Hansen, Webber and Lyon and Emerson—to mention only a few of the experimenters whose work has attracted wide attention, each engaged in a special line of plant breeding, all are working in harmony. Already far-sighted business men are following in the lead of these practical students, and we have in corn breeding a well established business. The corn plant is being subjected to much the same treatment as has resulted in the establishment of well recognized families of Shorthorn cattle. It will not be long before the catalogues will list as many strains of dent corn—rather let us say of Leaming or Hickory King or other variety of dent corn—as they now contain of varieties of that plant. In the past the Experiment stations have been the butt of more or less good-natured ridicule on the part of the farmers, but had they accomplished nothing more than the work already done in plant improvement, they would have abundantly justified their existence."

Never expect the foal to eat with the mare, but always provide a small box in the opposite corner to feed the foal in.

With the Citrus Growers

By J. W. MILLS

WATER SUPPLY.

It was only a few years ago that the question of the water supply in some of the orange growing districts of Southern California was a very serious consideration. It got to a point where money lenders were calling in their loans and readjusting them on a lower valuation. The action of these men was a good indication of the real condition of the industry. The foundation of the industry is water. This was dropping rapidly in the wells in the majority of the choicest orange growing sections, and in some places it was getting to a point where the expense of pumping was about equal to the net profits. Every year saw the water receding in the wells and no one knew just where the end was to be. There was doubt in the minds of some if the subterranean reservoirs from which this pumping was done, would ever fill up again. No one knew how long it would take to fill these underground gravel beds which supply the various wells in certain sections. It might have taken one or two years and it might have taken one hundred years. In the first case, a few wet seasons would replenish the wells. In the latter it would have been a losing proposition to lay plans for future development or a continuation of operations. The last few seasons of bountiful rains have forever set at rest the uncertainty of the question. It is known all along the line that the water has risen more or less in all the wells where there was a continual lowering of the water level. What is still more gratifying is the knowledge that the waste water that runs off into the sea every winter, even during the driest winters, may be so distributed over some of the gravel deposits near the openings of the canyons that a large part of it at least may be directed into these subterranean gravel beds, thereby keeping up the supply for the wells. It is thus seen that the recent seasons of abundant rainfall have not only been of immense immediate value to the southern part of the state, but they have demonstrated that the future is safe even with a longer series of dry years than we have known.

KILL THE WEEDS.

It is not fully realized by most farmers that the weeds and grass that are often allowed to grow and go to seed in the orchards during the spring and summer take gallons of water from the soil every day. The only way to realize it is to sit down and figure it out. It will be observed if a "tumble weed," for instance, is cut off at the surface on a warm sunshiny day, that though it is quite heavy at the time, the next day it will be so light that its weight can scarcely be felt. It will not take a very great stretch of the imagination to realize that if it were possible to put it back onto the root and allow it to fill up with sap again, then cut it off again, repeating the operation every day, that many gallons of water would be extracted from that particular spot every day. Now if the weed were not cut off at all, but allowed to grow and exhale the moisture continually, much more water would be sent off, for no time would be lost in evaporation. Another significant thing is observable. When this and some other kinds of plants are cut off at the surface, the sap will continue to run out and wet the soil for several days, showing the extreme activity of the roots in taking in the moisture from the soil.

Grass, when first cut, contains about 75 per cent. of water. A light crop of grass will weigh about 1000 pounds per acre. That means 750 pounds of water, or nearly 100 gallons. At a low estimate it would be about 3000 gallons per month. Succulent weeds would use up a much greater amount of moisture. These facts show that it is very necessary to keep the summer weeds from growing. While there never is a very great amount in orchards that are regularly irrigated and cultivated, that have weeds growing in the spaces, but it is quite common to see trees with a heavy growth of weeds around the body of the tree all summer. Otherwise well-kept orchards often have weeds growing up through the branches year after year. It is no doubt a good plan to allow them to grow there during the wet season as the roots loosen the surface soil. It is quite an expensive job to clean these weeds out with a hoe. Any low built cultivator that does good work there.

THE KUMQUAT.

This is the smallest of the citrus fruits and has not heretofore been planted very extensively for commercial purposes in this country. It is supposed to have originated in Cochin, China, and is quite extensively grown at the present time in Japan, also in the districts of Fu-chau, Chusan and Ningpo, China. In Japan it is called Kin-kan, which means Gold Orange; Kumquat is Chinese for the same meaning. Botanists now know it as Citrus Japonica, although it has in the past been listed under various names by horticultural historians.

The tree attains a height of 10 to 12 feet, with a spread of top nearly equal to the height. It is very symmetrical in growth and produces an abundance of handsome fruits annually. The blossoms come during the summer and the fruit ripens during the late fall and winter.

This fruit has been introduced, in a limited way, in the markets of this country and, where properly handled, has brought very fancy prices. In packing the fruit, always clip little bunches of fruit with foliage attached and pack it in strawberry baskets. In northern markets it seems to sell better where the foliage is mixed in with the fruit, as Kumquats are often used for table decoration, and the leaves add greatly to their beauty. This is an advantage from the shipper's standpoint, as the leaves help fill up the baskets and make a larger volume than if the fruit is clipped off and packed by itself.

In China and Japan, Kumquats have been grown almost exclusively on Citrus trifoliata stock, to which they seem admirably adapted. We have propagated them in a limited way on sour orange and sweet orange roots, but they do not seem to prove very successful on these stocks. At the present time we are propagating them on both Citrus trifoliata and rough lemon stocks, and while they do better on the Trifoliata with us, there are some sections in which the Trifoliata is not desired and to which lemon stock seems to be admirably adapted. The Kumquat grows well on both stocks.—G. A. Taber, Florida.

ORANGE HISTORY.

"Tales of an Old Timer," in Los Angeles Express: I have been asked something about when oranges first made their appearance in Los Angeles, and from some data which I happen to have on hand am enabled to give the following: There were no oranges in the town of Los Angeles in 1837. About the year 1835, Don Luis Vignes, better known as Don Luis del Aliso, he of who I told you in a previous article, procured from the San Gabriel Mision two or three bearing orange trees and planted them near his house down on Aliso street, on or near the present site of the Maier & Zobelein brewery.

Don Luis had previously planted some orange seeds, which he may have brought from the Sandwich islands in 1831, when he arived in Los Angeles, or it is possible he might have got them at San Gabriel.

About the year 1835, William Wolfskill planted some orange seeds and raised a little bed of orange trees at his old vineyard on San Pedro street.

From this bed, or miniature nursery, came the trees which he first planted about the year 1838 in orchard form near his house.

About this time he also planted a nursery of oranges and some limes to the northward of his house. This piece of nursery ground was about 50x150.

About 1853, a Dr. Halsey planted a large nursery of oranges and limes on what was known as the Carpenter property on Alameda street. These he sold out to Wolfskill in 1857. The seed which Halsey planted, was, I believe, from Tahiti.

In 1859, Halsey planted another similar nursery, with the addition, I believe, of some flowers and, perhaps ornamental shrubs, on the Laughlin property opposite Wolfskill's. This nursery he finally disposed of to Mrs. Ogler.

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California Cultivator

ESTABLISHED 1889.

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FRUIT TREES FOR THE ROADSIDE.

We have often been impressed in riding through California, by rail and otherwise, with the mistake that has been made by our people in not planting fruit trees along the roadway. Especially so in the northern and central portions of the state where irrigation is not so essential to the existence of trees. The sense of wasted opportunity is apparent and one cannot but regret that our people have not seen this mistake earlier. Just think what a variety and abundance there would be of fruit of the hardier varieties, had our early settlers improved their opportunity to line the miles of dull, shadeless roads with apple, plum and cherry trees, which not only would furnish beauty, but fruit as well. The cost would have been slight, the amount of care required small, the returns how large! In the neighborhood of towns and cities, also, the abundance of roadside fruit which the boys might be permitted, under slight restrictions, to pick up and eat at will, would have been a protection to private trees, which few persons now attempt to grow on account of the general apprehension that the boys, not the cultivator, would get the fruit. Riding along a road in Santa Barbara county recently, we noticed a strip of fruit trees on either side of the highway. We were told that these trees furnished a good deal of fruit, one year with another, and they certainly looked beautiful, covered with blossoms which fill the air for blocks around with an aroma fit for the gods to breath.

ENFORCE THE FOOD LAW.

Secretary Wilson has already taken steps to enforce the new food and drug law by appointing a commission of experts to look after it especially. The chairman of this commission will be Dr. H. W. Wiley, chief of the Bureau of Chemistry, and one of the most practical and capable men in the government service. The legal phases of the enforcement of the law will be looked after by the department's solicitor, George P. McCabe, and Dr. Frederick L. Dunlap of the University of Michigan will devote his time to the scientific phases of investigations into violations of the law.

As was to have been expected of so conservative and just a man as Secretary Wilson, there will be no unnecessary noise with respect to making effective the provisions of the new enactment. It has been freely charged that the manufacturers of whiskies have banded together for the purpose of fighting the provision which requires labeling of "blended" whiskies. Secretary Wilson claims to have no knowledge of such action, but is prepared for any opposition that may arise. "We will make no haste in the enacment of the law," said he, "and everybody will be given ample time to comply before any action is taken. The Civil Service Commission has not yet given us our inspectors, but we hope to get them soon. When they are in the field they will report on any case where the law is not being obeyed. The party violating it will be communicated with and asked if he intends to comply or if he wants a hearing. If he asks for a hearing he will appear before the board and state his case. If he ignores the warning or openly refuses to comply with the law, the matter will immediately be thrust into the courts for their decision. There will be no haste and no persecution, but a gradual tightening of the lines."

The new law has already been productive of benefit in restraining adulteration of food products and manufacture of unwholesome and dangerous drugs circulated as cure-alls; it is not too much to expect that a great deal more will be accomplished on behalf of the innocent consumer.

CULTURE OF THE OLIVE.

Closely associated with the culture of the olive is much ancient history as far back as the time of Greece and Rome. History records that the great olive trees yet to be seen around Tivoli, in Italy, were already old when Romulus traced with his plow the walls of Rome. Nearly three thousand years have passed since then, and yet the trees stand vigorous and productive. The same can be said of the magnificent olive grove that lies on the east side of Jerusalem, which gave to the "Mount of Olives" its name.

Among the Greek the olive was sacred to Pallas Athens (Minerva) who was honored as its bestower. It was also the emblem of chastity and the symbol of peace. Poets have sung its praises and historians have vied with each other in recounting its beauty and utility.

Historical records tell us that this precious tree was introduced into California in 1769, from San Blas, Mexico, during an expedition of Franciscans, sent to take charge of the Jesuit missions in California. It appears from the ship's manifest that one Jose de Galvez, who was Visitor-General, and secular head, representing the king of Spain, and Father Serra, proceeded to make arrangements for the establishment of new settlements and seemed to be far-seeing, for it was found that he had caused to be shipped to "Alta," California, flower, vegetables and fruit seeds for garden and orchard and grain for the field.

All the Mission orchards were very small and some had but few trees, but those trees play an important part in the horticultural history of our state, for they laid the foundation of a gigantic industry, and furnished stocks for many groves, which today may be styled the "prehistoric" orchards of the state. Thus the Mission Fathers builded wiser than they knew.

The culture of the olive for commercial purposes forms an industry that with proper protection, should be regarded as one of the safest in California, and under favorable conditions the most profitable of all branches of horticulture.

NO MORE DESECRATION OF THE FLAG.

The supreme court of the United States recently delivered an opinion sustaining the constitutionality of a Nebraska law to prevent desecration of the national flag. The decision is looked upon as settling definitely whether the states can constitutionally prohibit the use of the flag for commercial purposes.

The case was that of a firm of liquor dealers at Omaha who had decorated beer bottles with a representation of the Stars and Stripes. Under the state law they were fined, and took the case to the United States Supreme Court. That court, with one dissenting opinion, has declared that states may pass laws prohibiting the use of the flag for advertising purposes. Justice Harlan, who delivered the majority opinion, said that the use of the flag on beer bottles cheapens and degrades it, and that prohibitory legislation could not be considered an abridgement of personal rights.

"This decision," says the Spokesman-Review "will be welcomed by many people all over the country, and by none more than by officers of the army and navy who have long been advocating for the entire nation a law such as Nebraska has. Objection has often been taken to various uses to which the flag has been put, but on the other hand it has been and still is argued by some that the flag, being the common property of the people, can not be used by some and denied to others. It is contended that if an inscription of a patriotic organization can be placed upon it any other private use can be made of it. The supreme court holds, however, that where such use is degrading it can be prohibited. The decision will appeal to the patriotic sentiments of all loyal citizens."

The decision of the supreme court will curtail the use of the flag on many advertising propositions, the only virtue of which was the stars and stripes which incircled them.

AMENDED CHILD LABOR LAW.

The Cultivator has been requested to state what the present form of the child labor law as amended by the legislature is.

Section 5, as amended reads: "Nothing in this act shall be construed to prohibit the employment of minors at agricultural, horticultural, viticultural, or domestic labor, during the time the public schools are not in session, or during other than school hours. For the purpose of this act, horticulture shall be understood to include the curing and drying, but not the canning, of all varieties of fruit."

It will thus be noticed that minors may be employed in curing and drying fruit, but not in canning the same.

USE THE CULTIVATOR.

About the time we think we have got rid of all the weeds from last winter, a new order will begin to show above ground from seeds left in the soil from last summer's crop. If the ground has been kept clean for several years and no weeds gone to seed, it will be comparatively easy keeping down the weeds for the summer season, but if any quantity have been left to seed warm weather will be sure to bring them up in all the irrigated districts. Elsewhere it will be a comparatively easy matter in view of the dry season. The cultivator must now be kept going at all seasonable times, both on dry and irrigated lands.

PLANNING A CROPPING SYSTEM.

Continued from First Page

Fortunately, the farm described in Farmers' Bulletin No. 272 has shown that soy beans are not only an excellent hay crop in that section, but that they may be planted as late as the last week in June. This fact suggests rye as a winter hay crop. Only 2 acres of this need be used for hay, since only 7 acres of hay are needed and the soy beans furnish 5 acres. The remaining 3 acres of rye will be convenient for bedding. Accordingly, the following two-year rotation was laid out for two 5-acre fields: First year, corn, followed by fall-sown rye; second year, rye, followed by soy beans.

It is hoped that ultimately it will be possible by the study of farm practice on the best farms to arrange rotations in all parts of the country based entirely on successful local practice.

While this office can not undertake to furnish detailed plans for an indefinite number of individual farms, at the same time we desire the opportunity to do a considerable amount of work, in order that we may test the possibilities of certain types of farming and enlarge the number of highly successful farms, so that we may have more material for the study of farm management. Ultimately it is hoped to formulate generalized plans for farms of various types in all sections of the country, and to make these plans available in our publications.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

Army worms at Whittier are attacking both lemons and oranges.

Fullerton is at least 150 cars behind on her citrus shipments.

The walnut crop of Ventura county will be a big one this year, and prices will be high.

There has gone to date from Highland, West Highlands, Patton and East Highlands 1210 cars of oranges.

The Placentia association has shipped about 100 carloads of oranges and is twenty-five cars behind on account of car shortage.

The six or seven orange packing-houses at Fullerton are far behind in the season's output on account of the great car shortage.

The past week has been a banner one for orange shipments from Redlands, no less than 203 cars of 362 boxes each going forward.

Oranges brought to the Placentia association packing-house show that worms, a good deal like the army worm, are boring into the fruit.

The Wilson Fruit Company of Fullerton has shipped sixty cars of oranges this season, and is forty cars behind on account of the car shortage.

The Bureau of Animal Industry of the Department of Agriculture is entering upon a new war for the extermination of sheep scab in California.

Reports from various parts of the state are to the effect that the bees are making very little honey, and in some localities they have to be fed to keep them alive.

Reports from all over Southern California are that thus far, this season has been a record breaker in citrus fruits though it has not been as good as to deciduous fruits.

The Citrus Union at Fullerton has sent out 120 carloads, and is only about thirty cars short, having also hauled thirty carloads to Anaheim for shipment over the Southern Pacific.

Redlands rain is 23.32 inches, a total that has been exceeded only once since Redlands was founded, and has been exceeded but three times since 1870, since rain records began to be kept.

The Gregory Fruit Company of Colton has bought nearly the entire crop of apricots and peaches in the Hemet valley, paying $50 per ton for apricots and $50 per ton for peaches, taking the whole crop.

Every one is very busy at the Tustin packing-house this week. They have been working nights as well as days. Five cars of sweets and navel oranges and one of lemons have been shipped this week.

Taking the estimate that was made at the first of the year by a number of shippers, there are yet in the neighborhood of 210 cars of navels, and other varieties of oranges and lemons to ship yet in the Highland district.

While the heavy rainfall made the southern walnut yield an immense one, it also brought on the blight heavily, and it is considered that, on the whole, the returns to the grower will be no greater than in other recent years.

Fire destroyed the California Citrus Union and Rialto Orange company packing-houses at Rialto, causing a loss to the Citrus Union of $8,500 and to the Rialto Orange company of $13,500, and to Arthur Gregory of Redlands, $5000.

Information has been received from Horticultural Commissioner S. A. Pease that the worms have made their appearance at Highgrove between Colton and Riverside. In this section the worms killed 50,000 orange in one grove last year.

The new town of Wilmar near the San Gabriel Mission will have a denaturized alcohol factory, the erection of which will cost $160,000. The plant will occupy eight acres of ground and will utilize cull oranges, potatoes, sugar beets, etc.

HORTICULTURE.

Dan Myers has over a thousand young turkeys on his ranch west of Hemet.

The army worm pest is becoming more serious south of town and is appearing in some gardens in Pomona.

The prospects are that there will be a light hay crop in the San Dimas section, owing to the absence of late rains.

During last week shipments over the Southern Pacific amounted to forty-seven cars, mostly cabbages and oranges.

There is an abundance of dew feed and sunshine is all that is needed to give a record breaking crop in the south.

A car of oranges, the first iced with ice from Hemet's ice plant, was shipped from Hemet last week by Worthley & Strong.

The cabbage season is in full swing in the south now and for some time to come the vegetable will be shipped as fast as cars can be secured.

The Espee will not receive cabbages or oranges at Fullerton or Placentia, compelling growers to haul the product to Anaheim to be packed.

The first crop of alfalfa at Hemet has been cut and brought about $9 a ton. There is a good stand of the new alfalfa planted this season.

Although the bees in the interior are faring better than those nearer the coast, the present cloudy weather is very discouraging for bee men.

Redlands is again being visited by the army worm pest, the appearance of which at certain points in the valley was reported a few days ago.

Willow springs can boast of the first hay cutting of the season in Antelope valley. The first crop averaged a little over two tons to the acre.

G. M. Frazier is putting ten acres of peanuts and thirteen acres of sweet potatoes; John Miller is planting twenty acres of peanuts and twenty acres of sweet potatoes, east of Hemet.

Jacob Stoner has recently shipped from his ranch in Heber, in the Imperial country, to Los Angeles, ninety-one porkers for which the Maier Packing Company paid 8½ cents a pound, a total of $1,342.45.

One of the newest manufactories to be planned for Southern California is an egg factory, operated on an enormous scale. The machinery to be used will be 25,000 laying hens, and the product will consist of fine fresh hen fruit.

Twenty-one carloads of cabbage and sixteen carloads of oranges were shipped from Anaheim during the past week. Three carloads of cabbage will be shipped daily from here during the ensuing week, the price received being $17 a ton.

Day by day the grain harvest is getting into swing, says the Imperial Standard. The machines now under headway are mainly binders, but the headers are being set at work and the owners of the great combined harvesters are getting them into shape.

Eight cars of onions have been shipped to date, from Thermal, says the Submarine, and while only positive returns have been received on three, there is every indication that all will average three cents net to the growers, after paying for the crates.

Numerous fruit buyers are at Hemet for the purpose of buying the apricots. They are offering $30 a ton for green fruit. Orchardists are very fortunate in getting so high a price as there is an elegant crop of 'cots. Some of the groves are estimated to yield eight tons to the acre.

The orange crop of the Ojai Valley, Ventura county, has this year been a remarkably fine one, and the growers have obtained top-notch prices for the output. The Ojai oranges ripen about a month later than oranges in most sections of California, and this fact gives the fruit raised there an advantange. There has been no shortage of cars reported.

Northern California

AGRICULTURE.

Haying will commence early in Bennett valley and the crop will be a light one.

The farmers in the Alexander valley and Dry creek valley are fighting caterpillars at the present time.

In alfalfas, fifty-five varieties have been received, and are now under propagation at the Chico garden.

Sulla grass, from the European countries, and a rival of alfalfa, is also being experimented with in Butte county.

A Bennett valley correspondent writes that the good weather has had the effect of making crop conditions improve.

A number of the farmers of Meridian and District No. 70 have organized to build a new and modern creamery.

In parts of Central California, taking the country as a whole, no amount of rain will make the crops what they were last year.

A large amount of hay, principally alfalfa, is being shipped from Kerman to the splendid markets of Los Angeles and San Francisco.

The Libby, McNeil & Libby cannery, just below Isleton, is about completed. They are about ready to can asparagus, fruit and vegetables whenever these are ready.

The Monterey county grain crops on the south side of the river will be short. They are suffering greatly for rain. The later sown crops look better than the early sown.

Crops about Soledad will be short, the surface of the ground is so baked. Nearing Gonzales crops seemed much better and there are some really fine fields of grain, especially late sown grain.

In all cases, say the Sacramento hay balers, wood for cook house, feed for horses, water and air are to be furnished the baler. Many presses may not press on account of scarcity of men.

The weather has been so cool that the bees could not gather honey. They start out in the warm part of the day and the cool breeze coming up in the afternoon chills them and they are unable to reach their hives.

The ground in Monterey county is baked so hard it seems to pinch the grain off at the surface. It has a short growth and the heads are very short. The yield will not equal that of last year, even if we have rain immediately.

An important experiment is being carried on in the North with African para grass, and this may prove in time to be of the greatest benefit to certain sections of California. This grass is raised in some sections in preference to alfalfa.

The Japanese matting grass plants, the obtaining of which brought so much trouble to Special Agent Tull, have been planted in the open in Northern California and will be retained until next winter, when they will be transshipped to other parts of the United States.

A novel implement for use in beet sugar culture will be shipped from England in a few days to the Alta California Beet Sugar company. It is an immense plow with steam engines such as are used for plowing in beet fields of Europe. The entire outfit costs approximately $25,000.

Elwood Mead, of the Department of Agriculture, has been in Fresno conducting experiments in regard to alkali drainage. He believes that great things are to be done with lands which have long lain waste because of alkali when the system of alkali drainage comes into practice.

The hay-pressers of Yolo county held a meeting Sunday and entered into an agreement to maintain the following prices for the season of 1907: Pressing hay and bucking from shock to press, $2.50 per ton; pressing from stack, $2.15; pressing where wire is furnished, $1.80; pressing where board and wire is furnished, $1.50.

HORTICULTURE.

Estimates of the Vacaville prune crop range from a fifth to a third of a crop.

The Fresno Republican states that buyers are paying $40 a ton for apricots on the tree.

An organization of apple packers has formed under the name Watsonville Packers' Association.

The fruit crops in Placer and Siskiyou promise to be good owing to cold weather keeping the trees back.

The Southern Pacific Co., expects to put on a berry and fruit train from Watsonville to San Francisco in about a week.

Apricots about Vacaville will be very light; probably from 2 to 5 per cent. of a crop. This, however, is better than last year.

Tehama county has the promise of the banner fruit crop this season of all varieties, including the peach, prune and almonds.

All over the north grapes are doing well, and good results are looked for.

Lindsay has shipped over a hundred cars of oranges since Jan.

Cherries in the Vaca valley—Early varieties light; later varieties good. Tartarians, which follow the earliest varieties, will also be light.

The big cannery associations have had their representatives around Winters this week, and a few sales of apricots at $60 are reported.

The apricot crop in Fresno will be better in quality but about the same in quantity as last year. The canning season will open about June 1st.

The orchards on the Buena Vista all show strong evidence of too much rain; consequently mildew, curly-leaf and different fungoids are coming on.

In King, Tulare and Fresno the crops will be fair to good. That of apricots fair, peaches better than last year while there will be a good prune crop.

Generally speaking, the later varieties of plums have a fair crop in Monterey county while the early ones are short with the exception of Climax.

There are many thousands of caterpillars in the orchards of northern Sonoma, and if it were not for the activity of the farmers they would do untold damage.

The tragedy prune crop in Vaca valley is a failure. This is one of the best shipping plums and there is probably a larger acreage devoted to them than any other variety.

The peach crop throughout the San Joaquin valley is good and the price for the fruit will be strong. In fact, indications are that the prices for all kinds of fruit will be good this year.

Yolo county reports conditions not so bad as had been reported. The yield of almonds and apricots is spotted. The crop of early peaches will be light, but there will be big crops of the late varieties.

The California Fruit Canners Association is going to pay fifty dollars a ton for the blackberries which they have contracted in the Sebastopol section, although the contracts call for only $45 per ton.

In the Sonoma county hills, four miles north of Healdsburg, is a ranch of 630 acres belonging to the Salvation Army, and on which homeless boys and girls are reared into strong, honest men and good industrious women.

The heavy rains destroyed a great deal of the bloom of the early crop of northern fruits. The pear crop, from present indications, will be unusually large. The prospects are also good for an average crop of both prunes and plums.

Otto Michelson, superintendent of the Alexander valley winery, estimates that in the neighborhood of 200 acres of new vineyard are being set out this season in that valley. Most of the cuttings are the resistant stock, but some are planting the old roots.

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

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YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Haphazard feeding is no longer profitable. Try Midland Food and be convinced.

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The acknowledged standards of perfection. All poultry men who have used these machines have supreme confidence in their ability to hatch and breed. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for the greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. Filcher, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clork Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

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Main Office and Factory, Petaluma, Cal., Box F.
Los Angeles, 505 South Main Street.
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WHITE MINORCAS

Won at Alameda Poultry Association Show, 1907: 1st Cock, 1st Hen, 1st Pullet

EGGS FOR SALE—$2.50 per Setting of 15; Two Settings, $4.50; Incubator Lots $10 per 100.

White Minorca Incubator Chicks For Sale, Price 20c. Each.

A Few Hens For Sale to make room. Prices on application to

Coulson Poultry and Stock Food Company
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Lincoln Avenue Poultry Yards

Successors to
Capt. E. Pryce Mitchell

Mitchell's White Leghorns Exclusively

Carl C. Curtis, Owner — Lincoln Ave. and Ventura St., Pasadena, Cal.
Circular for the Asking — (Altadena Cars)

200-250 Egg Fowls | **WHITE WYANDOTTES** | Always Win

Eggs and Stock Half Price for May

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Chicks Just Hatched

We ship them everywhere. Pure Bred White Leghorn Chicks from the Best Egg Producers in the United States

CALIFORNIA INCUBATOR CO., MAXWELL, MAY 27, 1906.
Gentlemen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come so far and keep so long on the way without the loss of a single one, but it is an undisputed fact that such was the case. We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. CAMPBELL.

CALIFORNIA INCUBATOR CO., 907 Washington St., Petaluma, Cal.

Profit in the Poultry Yard

By Mrs. A. Basley, Hollywood, Cal.

MORE ABOUT PIGEONS

AMONG the many letters I have received during the past week have been two about pigeons asking questions as to the best breeds for commercial pigeons, squabs for market, and as both ask for an answer in the Cultivator I think we had better take it as our topic today.

About two weeks ago I told of the large pigeon ranch on the Los Angeles river and I also mentioned Mr. Ranson's success with Homer pigeons on his town lots with five hundred pairs of Homers.

Some of the questions asked are:

What kind of pigeons are best for squabs? What kind for market?

What size wire mesh is required for the pens?

What are the best kind of fancy pigeons?

The wire is the two-inch poultry wire, and if you are going into the pigeon business as a business I would urge you to send for bulletin No. 177 as I suggested in my article of April 25th in the Cultivator, as it describes the yards, houses and necessary appliances.

As to the best breed for market Mr. Ranson writes: "The fact that common and mixed breed pigeons are not just as good as Homers for squab breeding is shown in the difference in the price, Homer squabs bringing $3.00 per dozen, whilst common squabs bring $2.00 per dozen." In the U. S. Department of Agriculture Bulletin 177 you will find this recommendation of them: "The best variety of pigeons to keep for squab raising is the straight Homer. These magnificent birds are large and healthy and are good workers, always active and hunting about like the Leghorn fowls; are the best of feeders; are of quiet disposition when properly mated, and their eggs are seldom infertile. For these reasons I consider the straight Homer par excellence among all the pigeon kind, the best for 'squab farming;'" the author of the bulletin is W. E. Rice. He is an extensive and successful pigeon breeder.

In reply to one question there are a number of books for pigeon breeders and fanciers, but I think you would find the magazine called "Pigeons," and edited by Geo. Ewald at Peotone, Ill., would be just what you want and you will find other books advertised in it.

In reply to the question as to how to mark the birds, you might call the first pen "A" and the second "B" and so on. Suppose you have fifty or sixty nests in pen "A"; you should not have more. Each nest has a number. Mark the pair in the first nest No. 1. Put the band on the right leg of the male and on the left leg of the female, let this always be your rule, so that when you see a mated pair you will always know which is the male or the female, and if one dies you can tell which it is and can therefore remate without delay.

Mark the offspring of the pair "A" with a band marked with "A.11" and the second brood "A.12," the next "A.13" and so on, marking all the offspring of "A.1" with a "1." followed by a 3 or 4. The nest next with another old pair mark "2" but pen "A," letting all of their offspring have a "2" on their bands. I think this is about the way Mr. Ranson marks his birds. He is very careful not to inbreed and also to mate properly.

You will find that by banding and knowing each bird individually, it is interesting as well as helpful in the business, for there is a difference in the disposition of pigeons as in people, some are good workers, will have as many as ten pairs in a year whilst others are more lazy and indifferent and will have half the number. You want to breed from the good workers and their offspring, and the only way to keep track of them is by properly banding them.

Mr. Ranson makes his own leg bands with a sheet of aluminum which is easily cut with a pair of scissors; he has dies with the different numbers and letters and has everything so systematized that he has no trouble in keeping a record of his best breeders. A pair of pigeons will live and be good producers for six or seven years, so that when once you have your flock well established and you know each bird, you need only to cull and cull closely and replenish your flocks by taking only the offspring of your best breeders and feeders. There are some parents who feed their young most assiduously and their young grow surprisingly fast, whilst others are poor feeders and those have smaller young birds and are slower in having the next pair, and while the first may have ten pairs of young in a year, the second may have only five or six. It pays to cull and to raise only from the best, for it costs the same to feed a pair that brings in poor results as it does to feed a profitable pair. It takes time, skill and careful work to bring the yield of a flock up to the highest productive point, but it is very interesting and fascinating work.

The trouble with beginners is that they become discouraged and quit if they cannot get the same results in a few months that others are getting who have been breeding, selecting and culling for years. It requires time, patience and intelligent study and then the reward will come.

There are many pigeon raisers in Los Angeles who have from a few hundred to a thousand or more on their back lots that are doing well, and then there is that wonderful and mammoth pigeon ranch of which I wrote, the largest in the world, and yet there is not enough to supply the demand.

I kept pigeons myself for several years and made them pay, and pay well. Then my little grandsons wanted them and I sent them to their home. The first thing the cats got in and there was grief; those that had lost their mates in this raid were remated, then mice came in and the breeding was interrupted and soon there were more males than females and fighting was the order of the day; squabs were killed, eggs broken and finally the red mites came in and the boy's mother set down her foot and the pigeons were disposed of. So I feel as if I know both sides of the ledger.

When it comes to the killing and dressing, the best plan is to make a contract with a restaurant or hotel to deliver so many once or twice a week. You should have a regular

"The Hens That Pay Are the Hens That Lay"

Son of Togo and Louie, World's Champions

the year around, as ours do. "The most famous White Leghorns in the world," won first prize at Buffalo, N. Y. and at St. Louis World's Fairs; also at Madison Square, New York, winning all specials and medals for best hen, purest records best head, best hen in the show; have records of 185-193 to 229 eggs in nine to twelve months; large size and unequaled as layers. Eggs for setting. Improve your flock with one of our beautiful large white cockerels or hens; bred by trap nesting continuously for several years from World's champions for great egg production. Write for best trap nest made.

W. W. Howard
San Jacinto, Riverside County, Cal.

White Wyandottes

These are pure white, hardy, fine layers, carefully selected. Eggs $1.50 per setting.

Buff Cochins

Simply unexcelled as to shape, color and feathering. More prizes won than by any other western flock.

Special Mating, eggs $5, Others $2

Nothing but the very finest. Several fine cockerels, $5 each. Write for full description of them.

Harry McIntire, San Diego, Cal.
Runt-Homer, and Hen Pigeons

Spargur's Trap-Nested White Leghorns

Eggs from 200-Egg Hens, $1.50 per 15, $6.00 per 100
From Second Best Pens, $1.00 per 15, $5.00 per 100
Indian Runner Duck Eggs $1.00 per 13, $5.00 per 100
Blue Andalusian Eggs, $2.00 per 15, prize winning birds

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SILVER LACED WYANDOTTES

At the recent Poultry Breeder's Show we won eight ribbons on eight entries. "The best quality seen here for years, 1st cockerel has the best marked wing we have seen." —Pacific Fancier.
Eggs $1.50 per 15.

WHITE PLYMOUTH ROCKS

Grand laying strain, large vigorous stock, eggs especially recommended for incubator hatching, $1.00 per 15, $5.00 per 100, special mating $1.50 per 15.

FAIRVIEW POULTRY YARDS
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Eggs for Hatching

Thoroughbred White Rock eggs for hatching at $1.50 for 15. $6 per hundred.
Mammoth Bronze Turkey eggs, 20 cents each.
Also a dozen choice W. R. cockerels and baby chicks.

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We won on White Rocks, Barred Rocks, White Wyandottes, Buff Leghorns, White Crested Black Polish.

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Have for sale Trios, Cockerels and Pullets.
Eggs for hatching, settings or hundreds.
Write or call.

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S. C. WHITE LEGHORNS
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Eggs for hatching $1 per 13 $5 per 100 We breed from two year old hens, and the best ones of the flock only. No stock for sale. Ranch two blocks south San Gabriel car line.

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BARRED ROCKS
EXCLUSIVELY
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H. R. CAMPBELL
BOX O PETALUMA, CAL.

shipping day, and at that time kill all the squabs that are of the proper size. They should be killed before they get so large they will leave the nest. The standard size is eight pounds to the dozen. With properly kept birds, this weight is usually attained in four weeks with Homers. The common kinds take longer.

A little experience will teach you how to kill, pick and dress the squabs quickly. Some markets demand the heads to be kept on; others prefer the heads off—kill according to your market. Bleeding them thoroughly makes the skin and flesh white, which is very desirable.

Fancy Pigeons.

The secretary of the California Pigeon Club, W. E. Foster, writing from a fancier's point of view, says: "The breeding of pigeons in a city can be made to pay and pay well if the party going into the business is a lover of bird life and enjoys the care, attention and study that the pigeon requires."

The late Dr. Westlake once said: "If the bank clerk, the minister, the laborer and all those who toil either by brawn or brain, would take up a hobby like the pigeon fancy and get interested in it, they would receive far more benefit from it than from the medicine prescribed for them by the best doctors in the country." From this point of view, it most certainly would pay. From a money point of view it also pays if properly handled. A person cannot make great sums out of the business in a short time. I cannot tell you what breeds to keep, for there are about eighty varieties; these divided into five subvarieties, each with its admirers, is what constitutes the pigeon world. A fancier having a loft 20x20 feet could breed Pouters, or Maltese Hens, English Carriers or Runts or other of the larger breeds. Another fancier having a smaller space can breed English Owls, Fantails, Nuns, Flying Tumblers or other of the small breeds. Another person with only a little corner might try Turbits, Helmets or Russian Trumpeters. They are handsome and profitable. Still another with only a few square feet of space will find Parlor Tumblers do not need much space, for five feet square and two feet high will accomdate four pair. They sell readily, are little care and afford much amusement.

I feed, as a rule, wheat, kaffir and Egyptian corn, yellow whole Indian corn; occasionally hemp seed and Canada peas; always giving them plenty of good fresh water, both to drink and for bathing. There are very few diseases among pigeons. Grit and rock-salt is needed at all times. The houses should be free from draughts. In starting buy good stock from reliable breeders; prices are from $5 to $15 per pair. Good birds sell readily at all times; poor stock is always a drug on the market.

THE BUFF TURKEY.

The buff turkey is of American origin, having been brought out but a few years ago. Plumage color, pure buff, the wings being a very light shade of buff. Standard weight: Cock, 27 pounds; cockerel, 18 pounds; hen, 18 pounds; pullet, 12 pounds. Disqualifying weights: Cock, less than 12 pounds.

Cleanliness is next to Godliness. This is just as true with henkind as with mankind. Clean perches, clean floors, clean nests and clean hens are what constitutes cleanliness in chickendom.

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You may know how it has been done; but let us tell you the new way. Let the ACME MILLS way have a chance. Write for "Feed on the Purina System"—and prices. Double your egg yield—make hardy, healthy chicks.

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GUARANTEED ANALYSIS:
Protein 65%
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Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

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Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods
WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

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INGLEWOOD, CALIFORNIA

Los Angeles Show Winnings
Poultry Breeders Association, 1907

1st Cock	1st Cockerel	1st Hen	1st Pullet	1st Pen
2nd Cock	2nd Cockerel	3rd Hen	2nd Pullet	3rd Pen
4th Cock				

Silver Cups—White Wyandotte Club Cup for Best Pen; Association Cup for Best Male; Wm. H. Hoegee Cup for Best Display.

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Excelsior Mills
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Excelsior chick food is a perfectly balanced ration for your growing chicks. Will raise the largest possible per cent. of your baby chicks. All pure food, no shriveled grain and filler used in its manufacture. Absolutely clean and free from dust. No waste.

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Ask for Excelsior. If your dealer cannot supply you write us. Circular free if you mention the Cultivator.

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White Wyandottes That Are Trap-Nested

Prize Winning, Large Egg Laying Strain. Won Nineteen Prizes in 1906!

Mammoth Bronze Turkeys Lakenvelders
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Prizes Won at Alameda County Poultry Association Show, Oakland, 1907—22 Regular Prizes and 3 Silver Cups. Can furnish best birds and eggs at reasonable prices. No incubators lots furnished

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Baldwin's White Leghorns

Baldwin's Leghorns are all right in blood lines and for heavy laying right straight through the year they are unexcelled. I breed nothing but White Leghorns and make them a study, aiming at quality and market value combined.

My yards are modern in every respect and I invite inspection. Think of us when you think of White Leghorns.

My best pens are made up of stock from the first prize winners at the great show at Madison Square Garden, New York, 1905 and '06.

All stock sold on a guarantee to be as represented.

Eggs, $1.50, $2.00, $3.00 and $5.00 per setting (15). Incubator lots, $6.00 and $10.00 per 100. My $6.00 eggs are from selected yards. My $10.00 eggs are from especially selected matings of my finest birds.

Send for catalogue giving full description and prices of my matings and show records.

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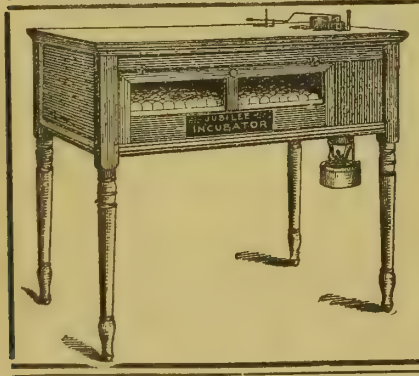

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Ask those who ought to know! Ask business poultrymen! They will tell you that for business results in Incubating and Brooding

The Jubilee Stands Supreme

Send for New Catalogue A, just issued.

Jubilee Incubator Co., Sunnyvale, Cal.

NOTICE

EGG FOOD A. C. W. IT FILLS THE BILL

If you, Mr. Poultry Raiser, buy seeds or grains for your chicks, you know then that there are two or more grades and consequently two or more prices. High and low grade materials can be used in chick food. A. C. W. is made from all high grade material, if you don't believe that buy a sack, you can't fool little chicks—watch them thrive on A. C. W. No bowel trouble—see them eat A. C. W.—no waste—does not this tell the story. It took us months of experimenting to discover the right formula, but we have it. A. C. W. in sealed sacks only, at dealers or at our factory.

The Agricultural Chemical Works

901-907 Macy Street - - Los Angeles, Cal.

Columbian Wyandottes

PEN No. 1 contains four imported females and cockerel, all very large, strong black hackles and white bodies. Sure to breed winners. Eggs $5.00 per 15 straight.

THEY ARE IT

PEN No. 2 — Headed by First Prize Cock and winner of National Columbian Special, mated to six A1 females. Eggs $3.00 per 15 straight.

FRANK J. IRONMONGER **Hollywood, Cal.**

The Featherly Farm Orpingtons

Prices Reduced One-Half For the balance of the season we will sell eggs from our 12 prize matings of Buff, Black and White Orpingtons, at half price. Prices now $2, $3 and $4 per setting, guaranteed. Order from this or from our catalog. Bargains in breeding stock to close our yards for the summer. Remember, we are the largest breeders of prize winning Orpingtons in the West.

P. L. Harley, Box C, Redlands, Cal.

Black Minorcas Exclusively

Our Minorcas excel in size and egg production. All prizes at the late Los Angeles Show were awarded our birds. Stock and eggs for sale. Send for our new illustrated catalogue.

Perham & Wheeler, R. F. D. No. 123, Lordsburg, Cal.

The Columbian Wyandotte

TWO COLUMBIAN BREEDERS.

The Cultivator takes pleasure in being able to give to its readers two articles on Columbian Wyandottes by two of the foremost coast breeders of this popular variety. Mr. Ironmonger was one of the first, if not the pioneer breeder to take up the Columbian Wyandottes, having imported a trio four or five years ago and has been a continuous breeder of them ever since.

F. J. IRONMONGER
Hollywood, Cal.

ED. M. BURNELL
So. Pasadena, Cal.

Mr. Burnell has bred them for three years, having discarded all other varieties for them. Having bred nine different breeds, he lands after a thorough trial that the Columbians are the best all-purpose fowl. He has about 200 breeders and over 1000 youngsters at this date. This, we believe, is the largest flock on the coast.

THE COLUMBIAN WYANDOTTE.

The wonderful improvement in the quality of the Columbian Wyandottes in the past three or four years was plainly noted in this year's poultry shows both in the East and West. It means that poultrymen(true to name) are taking up the breed and striving hard for supremacy.

But a few years ago the Columbian exhibited at the poultry shows were poor imitations of the breed as it now appears. It was difficult to find a specimen with a clean-cut hackle running to the skin or a clean shank free from stubs; but now after careful selection and mating we were able to see quality in the Columbians (as far as color was concerned) equal to the Light Brahma, and free from leg-feathering. As a guide in modeling the Columbian we have the White Wyandotte, which has been bred for such a time as to develop specimens that rival the Standard illustration for shape. For color requirements we have a still older breed, the grand Light Brahma, the breed that has a great many admirers, especially in the East.

It is hard to find a breeder, a Wyandotte fancier or not, who will disagree with me when I say that the Wyandotte shape is the grandest, plumpest, most graceful and most attractive of any breed described and illustrated in the American Standard of Perfection.

The contrast between the black and white in the Columbians catches the eye quicker that the coloring in any other breed. What is there that will attract more attention on a pretty grass plot, than a flock of snowy-white fowls trimmed in black?

The shape in the majority of Columbians, am pleased to say, equals that of their older relative the Whites; but still many breeders on account of lack of numbers in their yards are induced to use specimens that should go to the pot. It is only by careful and vigilant culling each year that any breeder is able to produce good breeders or show specimens.

In mating up our flock we must not lose sight of the fact that the Columbians are made up from a cross of a White Wyandotte male on a Light Brahma female, so naturally from the Brahma we can expect leg-feathering to crop out occasionally, and for this reason we must not allow any specimens to go into the breeding pens that show any signs of this disqualification unless the specimen is remarkably good in all other points, and then nothing but a little down between the toes should be allowed.

Select males and females as near the standard requirements as possible, for I think the results will be far more gratifying with such matings than from extreme matings such as mating light females with dark males or vice versa as advocated by some breeders.

In mating pens I select a male with the best Wyandotte shape possible to obtain, then look for clean legs (free from feathering or down), then see that his comb is of moderate size and not so broad as to obstruct the fowl's view, it should be well serrated and terminate in a single spike, which conforms and lies close to the arch of the head and neck. The comb on the male has more influence on the young stock, than does that of the female.

The next requirement should be the surface color, especially in the back; which should be white; sorry to say this serious imperfection in males has not been weeded out as it should have been. It is a hard matter, I know, to breed fowls free from brass, you will find it quite common even among White Leghorns. By carefully selecting males and females with white feather shafts instead of yellow, I think this evil will be eliminated.

Next see that the hackle is well defined, not smoky or broken, each feather should have a solid black center edged with a narrow strip of white, a broken hackle or surface nackle should be avoided.

A Pen of Prize Columbian Wyandottes
Owned by Frank J. Ironmonger, Hollywood, Cal.

The primary feathers of the wing should be solid black, or nearly so, having a white edge on the lower web, the secondary feathers should be black with the lower web sufficiently white so as to entirely cover the black in the wing when folded. I should avoid breeding from males or females not carrying the wings well folded as it indicates a weakness, and is bound to crop out some future time.

The main tail and main sickle feathers should be solid black to the skin or as deep as possible, the tail coverts laced with white. A male with some lacing (not ticking) on

the saddle feathers is generally a good feature in producing females. A male with a narrow black stripe in the hackle will produce good cockerels. In selecting females for the pen the same general rule, as to color, can be followed as that of the males. Dark, slaty, undercolor in the back of the females is almost a necessity in order to produce black wings and tails and a strong hackle in the young stock.

From stock filling the standard color requirements in all sections it is more than likely that some of the progeny will—when half grown—show a great deal of black in back, do not kill them until they have entirely lost their chick feathers, for I have found that these same chicks that looked like culls turned out to be my best breeders.

Another feature which is overlooked in both male and female is the color of the eye, which should be a rich colored bay, rather than the glaring pearl found in so many flocks.

My experience with the Light Brahma in the East has given me quite a knowledge of the results in the color of the Columbian Wyandottes, for hardiness and growth I used to think there was nothing to surpass the Brahma, but since taking up the Columbians, I have changed my views entirely; they mature at least two or three months earlier, and are as hardy as it is possible for any fowl to be. From the time the chicks are hatched, they seem to grow like weeds, seldom any sick among the flock. The Brahma blood strengthens any and all weaknesses.

As egg producers the Columbians stand at the front, and before many years have passed Californians will be able to visit many ranches devoted to this breed exclusively where from 500 to 5000 birds can be seen at any time. Their heaviest egg production is during the winter months and bad weather when the lighter breeds would rather stand up under cover and wait for the summer days, to do their work, when eggs are cheap.

I don't intend to advise people what to feed, as that subject appears in almost every paper each month, all I can say is to feed a variety of good wholesome food, no matter how cheap, and results are sure to follow. I think for egg production, rapid growth in young stock and fertile eggs, milk is the purest and most valuable of protein foods, either the skim milk or granulated; as I do not keep a cow I procure the granulated milk by the hundred pounds and keep it before my little chicks as soon as hatched and also my breeders, and am satisfied my wonderful fertility in eggs is due to the liberal use of milk.

I hope this article will be of some benefit to breeders of Columbian Wyandottes, and any questions regarding this beautiful and valuable breed mailed to my address will be cheerfully answered if possible; also likewise any information from breeders will be gratefully received as I, for one, want to see the breed perfected, and am sparing no time or money in producing the best.—Frank J. Ironmonger.

COLUMBIAN WYANDOTTE HISTORY.

The Columbian Wyandotte, the last addition to the family, bids fair to outstrip all other varieties of Wyandottes. We give herewith a brief history of the breed, and a few of their good points.

The Columbian Wyandotte was first introduced, during the Columbian Exposition and from that source the name was derived. They were originated by the Rev. B. M. Briggs, then living in New York state, but now of Moonsocket, R. I. The mating was an accident. The varieties were a White Wyandotte male and a Barred Plymouth Rock female; but by this cross the true feather lacings did not materialize as they should.

Later Mr. Edgar E. McIntosh (now secretary of the National Columbian Wyandotte Club of Hope Valley, R. I.,) becoming interested, used the Light Brahma instead of the Barred Rock with better results and the birds of today it is safe to say are of the Brahma cross.

Two years ago there were 31 birds of this variety entered at the Madison Square Garden show; last year there were 141 entered, and still a larger

DOLLIE
Columbian Wyandotte Pullet
First Pullet, Los Angeles, 1907
Owned by Ed. M. Burnell, South Pasadena, Cal.

entry this season. There was a special offered for the best Wyandotte male, any color. Mr. August D. Arnold of Dellsburg, Pa., won it with a Columbian, which was a great victory for such a new variety. Mr. W. B. Richardson of Rhode Island, has accomplished much for the advancement of these birds in advertising them and exhibiting them at all the large Eastern shows.

Many of the large breeders through the Eastern and the Middle states are taking them up, as they see for them a great future. Never having bred the light Brahma, I quote from a breeder who knows them from A. to Z.

"The Light Brahma has been in this country for half a century. For broilers and roosters they are used to quite a great extent. They are good winter layers of large eggs and are the hardiest fowls we have; being exceptionally free from colds and roup." So it will be seen the Columbian Wyandotte is composed of two of the best varieties of fowls we have.

The National Columbian Wyandotte Club was organized at the New York

JACK
Columbian Wyandotte Cock
Special Prize, Los Angeles, 1907
Owned by Ed. M. Burnell, South Pasadena, Cal.

show in January, 1905, with about twenty members, and I learn that there are already quite a number of members in this club from Southern California points.

For a new variety they breed exceptionally true as to markings, especially in the female. The male birds as yet are inclined to be a little light in neck hackle and tend some to brassiness, but these weak points will soon be bred out, bringing them closer to perfection.

Through the East the demand for stock and eggs far exceeds the supply. Eggs for hatching purposes readily bring from $5 to $20 per setting. From the first prize pen at New York, 1906, 30 eggs were ordered by one party and the price paid was $40.

August D. Arnold's circular says: "The Columbian Wyandotte did not come with a rush or a boom, but came slowly and surely as all great and lasting things come. They have worked their way up to their present high position by honest methods and by their real merits. Their popularity as an all-purpose fowl is but in its infancy. I am of the opinion that we could select one hundred judges and breeders and without a single exception, all would agree the Columbian Wyandotte is the coming fowl. Mr. George E. Howard, editor of the "Feather," Washington, D. C., made the statement at the New York show that the Columbian Wyandotte "would sweep the earth."

For color they should be identical with the Light Brahmas—but should have a rose comb instead of a pea and should have clean, yellow legs. They are good layers of large brown-shelled eggs—are very hardy, and the chicks mature rapidly.—Ed. M. Burnell.

Every breeder of Columbian Wyandottes should not be satisfied until he is a member of the National Columbian Wyandottes Club. This club issues from time to time, valuable information regarding this breed and offers liberal prizes to be competed for at the leading poultry shows by members only. The initation fee is one dollar and dues one dollar annually.

See that the fowls eat the food up clean. Enough for today may be too much for tomorrow. There is more reason why a fowl should have an appetite for an exact quantity every meal than there is that a human being should.

Indian Runner Ducks

Eggs from Pen No. 1, $1.50 per setting, $7.00 per 100. Eggs from Pen No. 2, $1.00 per setting, $5.00 per 100.

Clyde J. Moss, Corona, Cal.

WHITE WYANDOTTES *Hubbard Stock* heavy-laying prize-winning strain. Eggs $2 for 15; Baby Chicks 20c each. ***Cannon Poultry Co. 2851 Morgan Ave., Los Angeles, Cal.*** Take Slauson Ave. car to 29th St., walk 1 block west

Anconas Lay Anconas Pay
Imported and Domestic Matings Now Ready. Surplus Stock All Sold. Let us book your order at once for future delivery. **L. L. Viereck, Pres.** Ancona Club of America, **Albany, Oregon.**

SHADE'S RHODE ISLAND REDS
The World's best layers.
Write for Folder.
J. W. Shade San Bernardino, Cal.

Black Orpingtons
Single or Trios
Will sell out at a bargain. Twenty-five head from prize winning stock. Cockerels, Pullets and Hens. Prices.
Del Paso Poultry Yards
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WHITE, BUFF COLUMBIAN WYANDOTTES
And Golden Sebright Bantams, prize winners
Stock and Eggs in season
M. E. Dillingham, Box 87 San Gabriel, Cal

MY EXHIBIT OF
WHITE, BUFF AND PARTRIDGE Wyandottes
Won 26 Ribbons and Special Prizes at the Poultry Breeders' Show, 1907
R. D. Box D87 **L. E. BERKEY,** Fullerton, Cal.

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White Plymouth Rocks
Exclusively
The Largest Flock of Prize Winning Birds in the West
Including Wm. M. Humphrey's Entire Flock of Prize Winners. Birds in my yards won at Los Angeles, 1907, the largest show ever held in the West,
23 Out of a Possible 25 Prizes
Also at San Diego, Portland, Cincinnati, San Francisco, Fresno, Oakland, Hanford and other points, under as many different judges.
50 Males 500 Females
Will sell Singles, Pairs, Trios or Pens.
EGGS
$2.50 for 15, $10.00 for 100
From special matings containing my very best prize-winners, $10 per 15. Correspondence carefully answered. Visitors welcome.
A. J. Little
Monrovia, Cal.
Get off at Mayflower, walk north two blocks, thence west two blocks to ranch.

What Two Lice Can Do

They can virtually go right down in the poultry keeper's pocket and take the money. If left undisturbed the natural increase is so great that they soon multiply to a swarm that will sap the life of young chicks, breed disease in the pens and ruin profit.

Instant Louse Killer
(Powder or Liquid)
kills lice on poultry, lice on stock, and ticks on sheep. It is harmless to use, and will effectively destroy cabbage worms, slugs on rose bushes, and bugs on cucumber, squash and melon vines. Instant Louse Killer is the original powder louse killer put up in round cans with perforated top. Look for the word "Instant" on the can —then you won't get an imitation.
1 lb. 35 cts. 3 lbs. 85 cts.
If your dealer cannot supply you, send your order to us.
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Petaluma, California. Pacific Coast Distributors.

WYANDOTTES, White and Buff
Special attention given to size and egg production. Every bird a true Wyandotte. Eggs, $2.50 per 15 straight. A. W. HUSKINS,
713 Waterloo St., Los Angeles, Cal.

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See our grand display—Stationary, Mining, Hoist and Electric Lighting Engines in full operation. See the Cascade Waterfall. Examine the Mining Hoist at Work.

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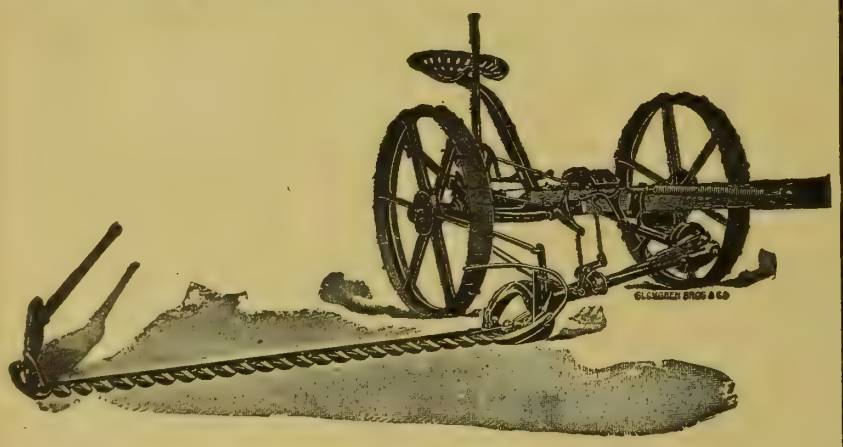

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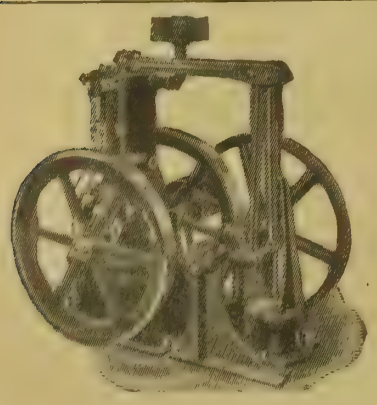

A Handy Little Engine

Just the thing to run the feed cutter, the pump, the churn, the grinder, or anything on the ranch. It's well named

The Little Wonder

Write or call on

Wm. Gregory

602 No. Main St. Los Angeles, Cal.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

Turkey Troubles.

You may get tired reading and answering our letters but we surely do not get tired hearing from you. I have a turkey in my flock that is a query to me. She is about one year old; she has never laid. I think she is the largest one I have. Some of the time she is kind of mopy and her head is rather dark. She has a good appetite and has no lice. Her case is beyond my understanding. Will it hurt young turkeys to run on a barley field? How can I tell if my eggs are fertile? How old can eggs be and hatch well? I am handling the Plymouth Rock (Barred) chickens and my early eggs did not hatch very well. I have two cocks with about 38 hens. My hens are large and healthy yet not very fat. They had some lice early in the spring but not enough to stop their laying. The feed I give my flock is wheat twice per day, free range on alfalfa, bone, (green cut) and charcoal, table scraps and plenty of fresh water. Truly yours.—N. L., Oakdale.

It is very rare for turkey hens to be barren, but you evidently have a barren turkey, and if so the only thing you can do is to eat her.

It will not hurt young turkeys or old ones to run on barley or wheat fields; wheat or oats are better than barley as they have not the beard.

You can only tell if eggs are fertile by incubating them for a few days and then looking at them through an egg tester.

Eggs should be as fresh as possible if you want a good strong hatch, but you can keep them two or three weeks, especially if you turn them over every day as the hen does.

There was a good deal of complaint among breeders that their early eggs did not hatch well this year. This depends greatly upon how the fowls got through the moult, the weather conditions and also the condition of the fowls themselves. When eggs are proving infertile more green feed and more meat or animal food should be given and less corn.

It is almost always necessary to give extra green food to insure fertility and also to have no lice. Your feeding is very good.

The rule with B. P. Rocks is eight to ten females with one cockerel but a good vigorous cockerel will fertilize the eggs of ten to fifteen hens; it is, however, too great a strain on his vitality to have a large number and he should have extra food or be fed separately every day.—Mrs. A. B.

Turkeys.

I hope you will kindly give me some information in regard to the trouble with turkeys. I have one that sits around and will not eat. I gave her one dose of calomel and followed it with Carter's pills one for three days, and fed her by putting food in her mouth two or three times a day for over two or three weeks, she would seem a little better but did not eat. Yesterday morning I gave her a dose of anilene and this morning she was dead. I opened her and found her full of a yellowish water and a yellow substance, two or three eggs partly formed. The liver was spotted with yellow spots all over. Please tell me what to do if any more get sick?

Your turkey died of liver complaint. I do not know whether it was the infectious kind called "black head" from the combs turning black or just common liver trouble, because you tell me so few of the symptoms and nothing about how you feed. The best way to cure the disease is to prevent it by keeping the turkeys healthy, giving them plenty of green food, clean water and animal food and as much free range as possible. When the disease has once commenced it is difficult to cure; however, liver pills alternating with quinine is the best remedy that I know.—Mrs. A. B.

Weevil in Hay and Grain.

Will you please give me a remedy for weevil in hay and grain? Subscriber, Orange.

Close the grain box with a little bisulphide of carbon in a dish setting on top of the grain. A half pint in a box three feet high and wide and six feet long will do the work. When they are in the hay, it is a difficult proposition. When your barn is empty sprinkle a gallon or two of the liquid on the inside on the walls and ground or floor. We will not say that this will kill them all in the hay but it may be worth the trial. Bisulphide of carbon is very inflammable and will explode at the "sound of a light," so don't use a lantern or allow anybody near it if you do this. You will have to do it quickly and get out of the building or it will treat you just like the bugs you are after.

Another good remedy is gypsum. Sprinkle it on the top of the grain in the box and it will soon smother the weevil. Perhaps this would work on your hay. It is harmless to the stock and is tasteless. It seems to act as insect powder, and while it does the work in grain, it is not so quick as bisulphide of carbon.—J. W. M.

Lemon Tree Nursery.

Will you please state in the columns of the Cultivator how to proceed to raise a nursery of young lemon trees. Also what is considered the best variety?

Kindly state the proper periods of planting seed, of budding or grafting, and time of permanent planting in orchard.

Thanking you for the past favors and valuable information received, I wish you success.—F. M. M., Ventura.

Remove all lumps or gravel from the soil to a depth of 18 inches, mixing some well-rotted stable manure with the soil to within five or six inches of the top of the soil of the completed seedbed.

The seed should be planted now in rows about five or six inches apart and as thick in the row as possible without having them too deep. That is, place the seeds in the trenches or small depressions made for them, so that they will just touch each other. These trenches should be about twice as deep as the seeds are thick.

Cover the seed with earth so that it will be level with the surface when pressed down with the foot. Cover with about half an inch of sand. Keep the seedbed shaded as a lath house or a piece of single burlap will do, till the plants are up several inches. In the meantime accustom the young plants to the sunlight till they can stand the full sun for the whole day. Keep the seedbed moist all the time clear to the surface. It is necessary

to settle the soil in the bed before planting with water and then smooth evenly, tramp it down and smooth again.

Sweet orange is mostly used for lemon stock, though pomelo and sour stock are good and may be better. This has not been definitely settled yet.

Eureka is the favorite lemon. Lisbon and Villa Franca are good. Lisbon is a better shipper than the latter, but has thorns, which quality is slightly objectionable.

Plant the trees from the nursery when one-year old. Let them grow all that summer, bud in the fall, remove the tops in the spring from those in which the buds have taken and tie the sprouted buds to stakes after they get up 10 inches or a foot. Allow them to grow one or two years in the nursery before planting in the orchard. Plant any time after the last of April till the middle of July. Some plant later in warm locations.—J. W. M.

Shot-Hole Fungus.

Will you please give me all the information you can "through the Cultivator," regarding the shot-hole fungus?

My orchard has been attacked by the pest and I wish to exterminate them.

If possible tell me the season in which I might get at them with spray, if spraying will kill them, or by what other means I may get the better of them.

My prune orchard is in black adobe land about twenty-four inches to hard-pan, wet in winter and never very far to moist dirt.

The trees are about fourteen years old and on the Maribolan root.—C. P., Santa Clara.

Spray your trees with Bordeaux mixture early in the winter. Lime sulphur and salt spray will also do the work, but it is more expensive and troublesome. If you have scale on your trees, the latter spray is the one to use as it will kill both the shot-hole fungus and scale.—J. W. M.

Bugs and Plums.

Will you kindly describe the "Sow Bug." Is it sometimes known as "Silver Bug?"

We have a Satsuma plum tree 5 years old that has never borne a plum although it blooms very freely. It makes a very rampart growth. Can you suggest what treatment it should receive.

A reply to the above enquiries through the Cultivator would greatly oblige.—A Subscriber, Claremont.

A good illustration of a "Sow Bug" may be seen, with a little change, in some reference book such as a cyclopedia of geology. If you can find an illustration of a trilobite, he will do with a little smoothing off of the corners. Never heard it called "Silver Bug;" a common name is wood louse.

Your Satsuma plum trees will bear when they get to be a little older. They are too vigorous to do much bearing. When they get past that stage they will get down to business and suprise you.—J. W. M.

Alfalfa in Orchard.

Will alfalfa do any damage to an apricot crop to sow it between the trees?—A Subscriber, Campbell.

Alfalfa will do your trees good if you have water enough for both.

Teat Trouble.

I have a young heifer that will be fresh in June that has a hard substance about her teats which apparently seems to be a wart; it is about the size of an ordinary marble. Can you give me a remedy that will remove same and oblige. A Subscriber.

If this animal is of sufficient value have the veterinarian operate as there is danger of obliterating the milk duct when ordinary people try to handle a lump as large as this one.

Legal Queries

Answered by L. M. FALL, Esq.
204 Frost Bldg., Los Angeles, Cal.

This department is edited by a practicing lawyer, who has had years of experience at the bar. He will give accurate and reliable answers to all legal questions when they are of sufficient importance to be of practical interest to any considerable number of our readers.—Ed.

Private Roadway.

My farm lies on the main road. My neighbor's farm lies just behind mine away from the road. For ten years he has been accustomed to go through my land to reach the road. Failing to close the gates, between my land and the road, I have ordered him to cease crossing my land. He now demands the use of the pass-way on the ground that long usage has given him that right. As he has used the strip, without any contract so to do, am I under any obligations to permit him to continue to use it? Have I the right to nail up the gates on his line and my own and refuse him admission to my ground? Subscriber, Lankershim.

If your neighbor alone has used this road it is by mere license and he does not obtain a permanent right thereto. In which event you would have a right to nail up the gates.

Who is Owner?

I bought a tract of land on contract. Wish to make improvements on it. In case I fail to make payments as provided in the contract and the land reverts, can I recover for the improvements? A lawyer told me I could recover the money actually expended for improvements if the seller expressed a desire for me to make them.—Mrs. B. C. E., Redding.

Unless it is stipulated in the contract to the contrary, the improvements become a part of the realty and cannot be removed without the consent of the owner.

Overflowing Well.

What is the best course to pursue when a neighbor's well overflows so that it renders adjoining property impossible to work? W. L. S., Nordhoff.

Your neighbor is liable for the amount of damages sustained by you. You might build a levee along your line and thus turn the water from your land.

Dog Killed.

A neighbor came into my yard and shot a valuable dog out of spite. The dog had not injured any of his property that I know of. Can I recover the value of the dog? Please answer.—W. W. C., Oxnard.

Yes, and probably exemplary damages.

HAVE YOU GOT YOURS.

Have you received the splendid free picture of the 1907 Girl? After much trouble and expense, the Sharples Separator Co. succeeded beyond their hopes in reproducing from life, in the softest and daintiest colors, the sweetest dairy maid ever offered by any cream separator company as a free picture suitable for framing and placing in any home.

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That highly nitrogenous poultry food, rich in protein, to keep the poultry in good health, and enable the hens to convert the surplus aliment into eggs. Just the right addition to a good grain ration.

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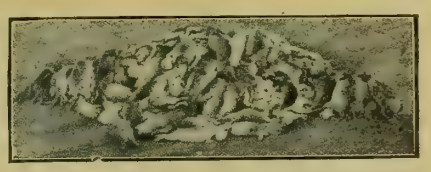
are the best made and, quality considered, the cheapest. If your dealer doesn't sell them, send to us. Booklet free. Send us names of 12 persons keeping poultry and we will send you free "The Poultry Manual" by those high authorities F. L. Sewell and Ida E. Tilson, profusely illustrated.



This is a photo of 201 Gophers killed in one day on a 10-acre field with one bottle of

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No strings to this offer. Just send us your name, the freight station to whch you want the goods shipped, mention this paper, and we will do the rest. Send money order or check with your order, and if every thing is not exactly as represented your money will be refunded. The First National Bank of this city, or Bradstreet's Agency, or any leading firm, can inform you as to our reliability. WEST COAST STOCK FOOD has for many years been a standard condition powder in this section. See our full page adv. in the March 7th and 28th issues of this paper or send for circular with testimonials.

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Household Department

UNIVERSAL HOPE.

The humble man out yonder who is
working in the ditch
Has the hope within him hidden that
some day he may be rich;
He has done no wise investing, he has
earned no man's regard;
He has wasted precious moments
when he should have studied
hard;
But, forgetting all the seasons that
so foolishly were spent,
He keeps longing he may profit
through some lucky accident.
The faded maiden, stitching as the
mirthless moments pass,
When the long day's work is ended
stands with hope before her
glass;
Youth and beauty she may never
claim again beneath the skies,
There are wrinkles radiating from her
dulled and weary eyes;
But within her bosom always an up-
lifting hope is pent;
He and she may meet tomorrow
through some lucky accident.
You have sought to win such honors
as the world gives to the great,
But your efforts have been fruitless;
still you labor and you wait;
I have builded Spanish castles; I
have longed to win applause
For heroic demonstrations in some
splendid, thrilling cause;
And we plod along, still hoping that
the grim fates may relent,
Each expectant and each waiting for
the lucky accident

—S. E. Kiser.

A SERIOUS TRESSPASS.

"KEEP STRAIGHT on till you come to the coast. Farther on you will pass through a defile with towering cliffs on either side. Do not on any account ascend the rocks on the right, for up therre is Livadia, the summer palace of the Czar."

The words were spoken to Frank Huxford of Chicago, globe trotter, mountain climber, grain operator, club man, horse jockey, anything, everything that a versatile American is capable of taking up, though how he managed to gratify so many tastes in one lifetime no one could find out. He had asked the way of a man who had answered in the Russian tongue, but Huxford understood never a word, so he proceeded in the direction the man pointed, trusting to luck to find his way. He soon struck a dense wood, from which he emerged in the defile mentioned by the man of whom he had inquired. On either side were cliffs, and his climbing instinct led him to attack an almost perpendicular ascent on his right. It looked plain enough from below, but on the route he was in the midst of dense scrubby trees and could neither see nor be seen by any one.

He emerged at last on a plateau, where he stood wiping the prespiration from his face and enjoying the view. Presently he lowered his eyes, and at the foot of the cliff where a section of the road was visible he saw a soldier leaning lazily on his gun. On another exposed section he saw several sentinels posted at short distances from one another.

Walking inward from the edge of the cliff, he came to a finely finished road and in another moment heard the patter of a pony's feet on the hard surface, and a phaeton containing a young woman and two little girls came round a point of rocks. The lady was driving, and, seeing Huxford, reined in the pony and asked him something in Russian which he did not understand. He took off his hat and made a bow in true American fashion and replied in English, for, his jaws not having been fashioned in infancy to utter bone cracking sounds, he had not learned the Russian lauguage. The young woman burst into a laugh and said in English, with a British accent:

"I asked you whether you have seen the Count Ehminoff go by here."

"I have seen no one go by here. I have just climbed up from below."

The lady's face grew grave. "Do you mean," she said, "that you have entered here except by the gateway?"

"I came from the road down there."

The lady paled. "But how did you pass the guard?"

"That accounts for a chain of soldiers I saw below. I didn't know there was a guard."

"Great heavens! You are in the Czar's grounds. How reckless my countrymen are."

"I'm not your countryman unless you are an American."

"Americans are just as foolish as our Englishmen. Do you know that you are in a frightful position?"

"Oh, I've climbed the Matterhorn. This is nothing. Do you suppose I can't get down where I have come up?"

"You passed the guard by one chance in a hundred. You can't expect to win that chance again."

"I will apologize to his majesty for trespassing."

"You will not see his majesty. You will be arrested and treated as a would-be assassin."

Both paused in the conversation, and both did a great deal of thinking in a very short space of time, at the end of which the lady said:

"Get in here quick."

The children were on the back seat, and Huxford got up in the front beside the lady. He had scarcely done so when there was a clatter of horses' hoofs coming, and a gentleman on horseback, followed by a groom, met them. Both he and the lady drew rein.

"Ah, count," she said in Russian, "I feared we had lost you. The children would have been greatly disappointed."

"I would join you, but I see you are full," replied the count, looking inquiringly at Huxford.

"This is my cousin, just from England, the Hon. Hubert Granger." Then in English she introduced Huxford to the count.

What further she said was in Russian and Huxford did not know what it was until he saw the count dismount and by pantomine offer him his horse. The lady told Huxford that she had expressed his wish to visit the opposite cliffs, and the count had offered his horse, with his groom, to point the way. Huxford, having alighted, made an American bow to the count, a French bow that he had learned in Paris, to the lady, and mounted the count's steed. Then, having made two or three more bows of different nationalities, he galloped away.

At the gateway the guard scrutinized "the Hon. Mr. Granger," but, seeing Count Ehminoff's groom following him, said nothing. Once well on his way, he wrote a pencil note on a blank page of a letter to "his cousin," stating that he had received a summons to England and must go without a moment's delay. This he gave to the groom and dismounting, pointed to Livadia. Then putting the reins of his horse in the groom's hands, he walked away.

Huxford failed to discover who was his preserver. One clew indicated that she was the governess of Count Ehminoff's children. Another, better supported, made it appear that she was a relative of the Czarina and a member of the English royal family.

WENDELL C. M'LAIN.

HOW SHE SECURED HER POSITION.

She was riding in to the city on the morning train in search of a position as stenographer. Having seen the large, florid man in the seat in front of her cut an advertisement from his newspaper and put it away in his pocketbook, she was just curious enough to look up the corresponding place in her own paper. Finding there an advertisement for a stenographer, she noted down the address and thanked her feminine curiosity.

She then turned back to her pencil and notebook. It seemed as if, practise as she might, she never could keep her speed up to one hundred words a minute. She tried copying from the newspaper, but the motion of the car made the words dance before her eyes until they hurt her. She tried making up sentences as she went along, and failed. Finally she resorted to talking down the incessant chatter of two women behind her, but their talk was often drowned in the disturbances of a number of young people still farther back, who were riotously noisy.

The young lady struggles with a tirade on the servant-girl problem, timing herself by the distance between stations—two minutes from Sherwood to Sherwood Corners; could she do two hundred words? As her hand dashed madly over the page, a large wad of newspaper flew past her and struck the florid man in the neck. The laughter behind subsided into dismayed giggles.

Slowly the large man turned his injured neck. He was redder than ever as he started to speak. The words fell from his lips, hot but distinct, swiftly but smoothly. He was telling the boisterous young people seven seats back just what he thought of them.

The young woman with the pencil saw her chance and took it. Here was glorious dictation. Her pencil flew. The speech lasted a minute and a half, and was cut short then only by the arrival of the train at the terminal. The stenographer slapped her book shut with a comfortable feeling of having done even better than a hundred words per minute, and set off in search of her position.

When she arrived at the address she had noted down, she was ushered into a private office where sat the man of the speech. She stammered a little until she saw that he did not recognize her. His mind had been full of bigger things. Then she smilingly told him her errand.

"Do you think you can take my dictation?" he said, frowning.

"Yes, sir."

"What makes you think so? I talk very fast."

"But very distinctly, sir." She produced her notebook and laid it open before him. "Here's a sample." She began to read her notes.

LEE'S LICE KILLER
Henry Albers Co. 315 South Main Street Los Angeles

His jaw dropped. There was his masterpiece of the train, complete and unabridged. It really sounded very well, so full of fire.

When she finished he looked at her sharply. His face was very red, but his eye twinkled.

"The job's yours," he said, in a subdued voice.—The Youth's Companion.

CANNING PEAS.

All varieties can be canned, but it hardly pays to do any but the best. Fermentation sets up readily in uncooked peas so that it is hardly safe to can any that have been picked over ten hours. The peas are shelled carefully and sorted as to size. If it is desired to have them remain green like the French peas, they are mordanted with sulphate of copper. To ten gallons of water add one ounce of sulphate of copper and five ounces of salt. When the water boils put in the peas and after five minutes drain of the water and fill the kettle with cold water to chill the peas as quickly as possible.

The American way is to simply use the salt in the water, this makes a yellow looking pea. The salt solution is used first as a cleanser from bacterial taints and must be thrown away as it will spoil the peas if used as brine on them. Fill the can or jars with the peas carefully. Use either of the following brines on the peas:

One pint of salt to six gallons of water, boil it up hard and skim, it can be used hot or cold over the peas in the cans. The other is the sweet brine, I like it best myself. One pound of sugar, one pound of salt to six gallons of water, cut up a small onion and add a head of lettuce; cook well and strain out the vegetables. Put the peas into the cans, fill up with the brine and solder all except the blow hole, or if in glass do not tighten the lids down. Add to the water in the kettle in which they are boiled, a pint of salt to each gallon of water, this gives a higher heat than plain water. Pints require 7 minutes cooking, quarts 10; remove from the kettle, solder or tighen up the jars, and then boil the pints ten minutes more, the quarts fifteen, in plain unsalted water. Take out, stand upside down until the next morning and if any are not tight they will have leaked. If in glass jars wrap them in paper to keep off the light, as it will fade the color out rapidly. A pinch or two of baking soda will aid if the peas are soft and show any tendency to discolor the water they are mordanted in.—Minna E. Sherman.

Cauliflower.

This vegetable a few years ago was a luxury; it is now cultivated by nearly all market gardeners, and is within the means of all housekeepers. It is a most delicious vegetable, when properly cooked, and vile when improperly cooked, which generally means when overcooked.

Remove all the large green leaves and the greater part of the stalk. Put the head down in a pan of cold water which contains to each quart a teaspoonful of salt and a teaspoonful of vinegar. Let it soak in this water an hour or more. This is to draw out worms, if any should be hidden in the vegetable. When ready to cook the cauliflower put it into a large stewpan, stem end down, and cover generously with boiling water. Add a tablespoonful of salt and cook with the cover of the saucepan partially off, boiling gently all the time. A large, compact head will require a full half hour, small heads from twenty to twenty-five minute. If the flowers are loose the heat penetrates to all parts quickly. When compact a little extra time should be allowed for the cooking, but the time must never exceed the half hour. The cauliflower begins to deteriorate the moment it begins to be overcooked. Overcooking, which is very common, can be told by the strong flavor and dark colo. It makes the vegetable not only unpleasant to the eye and palate, but indigestible also. If this vegetable must be kept warm for any length of time, cover the dish with a piece of cheese-cloth. in hotels and restaurants. It is better to blanch it, chill with cold water, and then heat in salted boiling water

DOES MAN WOO OR IS IT WOMAN?

Professor E. A. Ross of Wisconsin university has been talking most unpolitely. Man is not the wooer but the pursued in the human family, he says.

"In all lower animal families it is the male that is decorated and adorned. But when it comes to the human family there is a change. The females are the ones decorated and adorned and they decorate and adorn themselves to please the males. They dress to catch the eye of men because it is upon the men they must depend for a living. By dressing and adorning themselves, making themselves beautiful in the eyes of the men, they are able to secure a home and livelihood.

"Men are the burden bearers. They must do hard work. They have no time for decorating themselves. Women have great leisure and are enabled to attend to display. And by the display which the women are enabled to make their position in the world is fixed. The woman with the ability to make the most display stands highest.

"The woman who has many diamonds and rich clothing, proclaims to the world the fact of her husband's prowess in the financial game."

CARE OF WOUNDS.

If your horse picks up a nail in his hoof, tear away the horn until the blood starts. Then wash it thoroughly in a solution of bichloride of mercury at the rate of one part to 500 parts of water. Never close up a wound of this kind, but place absorbent cotton over it and then bandage with a thick cloth coated with tar. The essential thing is to keep out all dirt and allow the wound to drain.

BACK TO THE FARM.

One of the distinct features of the age is the tendency to return to agriculture. Where a few years ago the farmer's boys were rushing to the cities to crowd the professions, there is now a decided move in the other direction.

The natural reaction that must always follow a movement so radical in some measure accounts for the disposition to return to the soil for a livelihood, but there is more.

The agriculturist has become a professional man. The college and the university have added a special course for his benefit, and given him a degree.

He is a botanist and a chemist, and science has taught him to take in the jaded and worn-out farm, and with intelligence cause it to blossom like the rose.

The dispiriting labor which bent the forms of the elders and sent the lads scurrying cityward has been lightened by devices that better accomplish the end sought.

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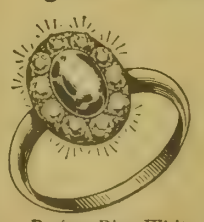

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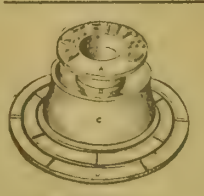

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FOR EXCHANGE—1 FINE FEED CUTTER, value $15, for fancy poultry or pigeons. Also Express wagon for laying hens (large breeds). H. L. BAUER, 737 S. Spring St.

METHOD OF IRRIGATING.

Most irrigating is done by one of two methods—through furrows, or by flooding. The furrows may be permanent or temporary. Plants such as strawberries and small vegetables that require the frequent application of small amounts of water are by most growers irrigated through furrows that are more or less permanent. Some farmers break up by cultivation the crust that forms on the surface, while others simply hoe from the furrows and the intervening ridges the weeds that grow there. This method of irrigation should be resorted to only in the case of such crops and under such climatic conditions as make it difficult to irrigate by any other method.

In Santa Clara and Alameda counties the prune crop will be about 50 per cent. of a full crop, for in many sections the trees were late in blooming. Apricots will be short, although some places report a good prospect for canning varieties. Similar reports come from Contra Costa.

There is a great divergence of opinion regarding the Vaca valley pear crops owing to losses which may result from dropping. Some say the outlook does not promise over a third of a crop; while others count on nearly a full crop with the exception of loss occasioned by blight.

AUCTION

31 MILK COWS
1 JERSEY BULL

Thursday May 16

At 10 a. m.

On my ranch 1 mile East of
CYPRESS

on Santa Ana Electric line, 5½ miles west of Anaheim. Take Santa Ana Electric cars to Cypress; teams in waiting.

31 head of first-class dairy cows, Jerseys, Durhams and Holsteins, all heavy milkers, young and in good condition; some fresh, others coming in soon. In fact, this is an extra choice herd of dairy cows; 1 registered Jersey bull.

On account of other business I am retiring from the dairy business, and am closing out my entire herd. Every animal will positively be sold to the highest bidder without reserve or limit.

Terms—Six months time will be given with note and approved security. 5 per cent. discount for cash. Free lunch at noon.

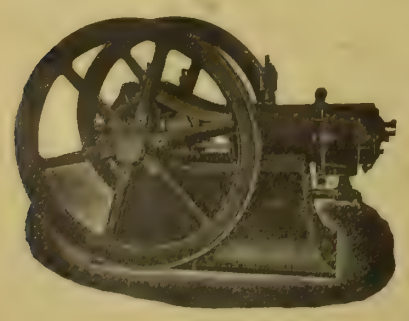
W. H. KERR, Owner
RHOADES, REED & RHOADES,
Auctioneers
Office—730 S. Spring St. Los Angeles

WHITE P. ROCKS

I offer my entire flock of White Rocks for immediate disposal, at prices that will surprise anyone that wants good birds. Extra choice males $2 up. Extra choice females $1.50 to $4. Eggs balance of season $2 and $3 per 15. Call or write.

F. A. SMITH
138 W. 32 St. LOS ANGELES, CAL.

BERKSHIRE BOARS FANCY POULTRY
Pedigreed Registered HOLSTEIN and JERSEY BULLS
Reliable Family Cows
Established 1876. Take advantage of our years of experience. Correspondence solicited.
William Niles & Co.
Breeders and Exporters Thoroughbred Live Stock
Los Angeles, California



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The Highest Grade Made. Won First Prizes at Sacramento and Porterville Fairs. Large stock always on hand. Send for Pump and Engine Catalogues.

G. W. Price Pump Co.
21-31 Jessie St., San Francisco
Branches — Sacramento, Visalia, Porterville

The Produce Markets

Los Angeles Markets

LOS ANGELES, May 9, 1907.

Business in the produce market is still flourishing and dealers are doing a large volume of trading. Many estimate the demand for produce occasioned by the large number of visitors in the city is even greater than during the holidays.

Butter.

Butter is still very firm. Dealers are having a hard time meeting the big orders, notwithstanding a heavy shipment yesterday which arrived by boat from the north.

Valley Creamery	47½
Coast fy,	45
Cooking	20

Cheese

Cheese is slightly firmer than it has been for several weeks, but the supply is still very heavy and the general tone of the market is weak.

Cal. Young American, per lb	19
California Anchor	18
Cal 3-lb. hand	20
Northern, fresh	15½
Domestic Swiss	22
Imported Swiss	30

Eggs and Poultry

Poultry dealers are probably having the most difficulty in supplying orders and owing to the inadequate supply prices have advanced 2 cents per pound. Orders were sent in by the largest hotels and restaurants several days before the Fiesta opened but the wholesalers have been unable to obtain a sufficient supply from the country and consequently are scaling these orders.

The demand for eggs this morning was strong but receipts were large, and, contrary to expectations, the price was not advanced on the Exchange. It was the opinion of the best posted dealers that prices would go higher tomorrow.

Eggs, local, per doz	21½
Northern Candled	19
Fresh Eastern	18

The following are average prices which dealers pay to producers for live weight:

Hens, per lb.	16
Young Roosters, per lb	18
Fryers	22
Broilers, per lb	25
Old Roosters	8
Turkeys	17
Geese	12
Ducks	15@16

Live Stock

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lbs.	7.75@8.00
Prime Steers	5.00
Heifers	4½
Calves per lb.	5
Sheep, ewes, per head	5.00@5.25
Lambs per head	6.50
Wethers	5.50

Potatoes

Receipts of potatoes were again large and the market is in the same weakened condition.

Sweets, Yellow, per sack	5.00
Sweet, White per sack	4.75
Colorado	1.75
Minnesota	1.70
Early Rose, Eastern,	2.25
Oregon,	1,80

Vegetables

Fresh green vegetables were all cleaned up early this morning, but prices were practically unchanged.

Asparagus, lb	10@14
Beets, per doz	30&40
Bell Peppers, Green, lb	5
Cabbage, sack	40@70
Chili Peppers, Green	30
Chili, Dried, per lb	13½
Cucumbers, per box	2.00@2.25
Cauliflower, per crate	3.00
Carrots, per doz	35@40
Celery, per doz	30@50
Egg Plant, per lb	15
Garlic per lb	6
Green Onions, doz. bunches	15@20
Lettuce, per crate	40@75
New potatoes, per lb.	3
Lima Beans, per lb	7@8
Onions, Silverskins	3.75
Nevada	2.50
Bermudas	1.75
Parsnips, per doz	35@50
Rhubarb, per box	1.25
Radishes, per doz	15@20
String Beans, per lb	7@8
Sugar peas, per lb	3½
Summer Squash, crate	1.25
Tomatoes, Mexican crate	2.00@2.25
Turnips, doz. bunches	10@20
Wax Beans, per lb	16@18

Citrus Fruits

Lemons	2.00
Valencias	1.50@2.00
Navels	1.25@1.50
Grapefruit Seedless	2.00@2.50
Grapefruit seedlinggs	1.25@1.50

Fresh Fruits

The heaviest receipts of strawberries for any one day this season was shown today, when something over 5000 crates came in. One firm took in over $3000 before 11 o'clock on strawberries alone. Notwithstanding the increased demand, prices declined another cent. Quotations were 3½@4c per box. Loganberries also sold lower, being quoted at 12c per box and but little

Apples, Bellefluer, per box	1.75
Apples, Ben Davis	1.50
Apricots per box	2.50

Dried Fruits

Evap. Apples, fancy, per lb	9
Apricots	18
Peaches	12
Pears	12@13
Prunes, fy,	5@8

Beans, Dried

Limas, No. 1, per cwt	4.75
Pink No. 1	3.00
Lady Washington	3.00
Small White	3.55
Black Eyes	5.50@6.00
Garvanzas	5.50@6.00
Lentils	12@15

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb. cans,	8
Light Amber	6½@7
Comb, water white, 1-lb. fms	15@16
Light Amber	14

Nuts

Almonds per lb.	19
Peanuts, Virginia	9
Peanuts California	6@7
Walnuts, No. 1 S. S.	14

Hay

Barley, No. 1	14.50 @16.00
Barley, No 2	11.00@12.00
Alfalfa, Local, per ton	15.00@16.00
Plain Oat Hay, No. 1	17.00@19.00
Plain Oat Hay No. 2.	9.00@15.00
Wheat No. 1	14.00@16.00

Grain

Purchasing prices f. o. b., Los Angeles are:

Wheat, new, per cwt.	1.50
Rolled Barley	1.35
Corn, per cwt	1.40
Cracked Corn	1.45
Feed Corn Meal	1.50
Shorts	1.35
Bran	1.20
Oil Cake Meal	2.50
Cocoanut Meal	1.40

San Francisco Markets

SAN FRANCISCO, May 7, 1907.

Butter.

California, ex per lb	22
California, firsts	21
California, seconds	20
Packing Stock	19

Cheese

New California, fancy	16
Cal. Young American, fancy	16½

Eggs and Poultry

Fresh Ranch Eggs	20
Eggs, first, per doz.	18
Hens, per doz	5.00@6.00
Hens, large	7.00@9.00
Young Roosters, largs	7.00@10.00
Young Roosters, small	4.50@6.00
Old Roosters	5.00&6.00
Fryers, per doz	6.50@8.00
Broilers, per doz	4.00@6.50
Ducks, young	6.50@8.00
Geese; per pair	2.00@2.50
Turkeys, per lb	16@18

Live Stock

Steers. No. 1	9@9½
No. 1 Cows and Heifers	6½@7
Hogs, 80 to 130 lbs	8@8½
Hogs 250 to 350 lbs	7½
Calves, per lb	5@5½
Lambs, yearlings	6½@7

Potatoes

Salinas Burbanks ctl	1.50@2.00
Rivers	1.85@2.10
Sweet Potatoes, ctl	2.75@3.00
New Potatoes	2½@4

Vegetables

Asparagus	6@12
Cucumbers, per doz	1.00@2.00
Chili Peppers, Green lb	15@20
Egg plant per box	3.00@3.50
Green Peas, per lb	3@
Squash, crates.	65@90
Onions, Yellow per cwt	2.00@3.00
Onions, new per box	6

Peppers, Green Bell	.25
Rhubarb, per box	.75@1.25
Tomatoes, Mexican	1.25@1.75

Citrus Fruits

Lemons	.75@2.00
Navels	1.25@2.75
Seedlings	1.50
Grapefruit, seedlings	1.00@1.50
Grapefruit, seedless	2.00@3.00
Limes	3.00

Fresh Fruits

Apples, per box	1.50@2.50
Cherries, per box	1.25@1.75
Strawberries, crate	1.00@1.50
Apricots, crate	2.00@2.25

Dried Fruits

Apples (evap.)	6@8½
Apricots, per lb	16@20
Figs, white	4@5
Prunes	3@4½
Peaches	10@12½
Raisins, seeded (1906)	3½@10
Thompson, unbleached	7½
Thompson, bleached	9@11

Beans and Seeds

Limas, No. 1	4.15@4.25
Pink	2.40@2.60
Large White	2.50@2.75
Small White	2.95@3.05
Black Eyes	5.00@5.25
Red Kidneys	3.75
Bayo	2.70@2.85

Hops

Fancy, 12c; choice, 11½c; prime 10½@11c; common, 8@10c per lb.

Nuts

Almonds new	14@18
Peanuts, Viginia	6½
Peanuts, California	5½@6
W lnuts	15@16

Honey

Clear White Comb	16½
Amber	14@15
Extracted	5½@7

Hay

Alfala, local	8.00@12.00
Oat	16.00@20.00
Wheat, No 1	23.00@26.00
Wheat, No 2	14.00@18.00

Grain

Wheat No 1	1.35@1.45
Barley No 1	1.20@1.23
Corn, small yellow	1.50
Corn, yellow	1.27@1.32
Oats, White	1.42@1.65
Oats, Red	1.30@1.50
Ground Barley, per ton	27.00@28.00
Bran per ton	22.00@23.00
Straw, per bale	45@75
Feed Corn Meal, per ton	31.00
Cracked Corn per ton	32.00
Oil Cake Meal, per ton	36.00
Cocoanut Cake, per ton	27.00
Calalfa Meal, per ton	31.00
Mealfalfa, per ton	31.00

Citrus Market

NEW YORK MARKET.

NEW YORK, May 7.—The market continues steady, with good demand at full prices. Portion of offerings in bad order. Weather cool and cloudy. Twenty-four cars oranges sold.

NAVELS—	Avg.
Ostrich xfy S B Ft Ex	$2.30
Winner xc S B Ft Ex	2.60
Lochinvar xc R H Ft Ex	3.25
Pride of Riverside xfy Riv Ft Ex	2.55
Quail xc O K Ft Ex	2.45
Overland xfy R H Ft Ex	2.80
Rebecca xc R H Ft Ex	2.55
Violet xc D M Ft Ex	2.85
Greyhound ch S A Ft Ex	2.85
Golden Sceptre Rialto O Co	3.15
Bronco xfy W American Ft Co	2.85
Herlad xc American Ft Co	2.60
Florencia fy J M Riley	2.35
Rose xfy Redlands O S A	2.85
Clover xc Redlands O S A	3.15
Orchard o r Nat O Co	3.45
Standard st Nat O Co	2.95
Criterion o r Penn Ft Co	2.15
Valla Vista fy Hemet Dist	3.25
Gypsy Queen xfy Moulton & Gre	3.40
Carnation xc Moulton & Greene	3.10
Old Mission ch C C Chapman	2.55
Golden Eagle st C C Chapman	2.40
Whittier xfy Redlands Junc Dist	3.40
Whittier xc Redlands Junc Dist	3.25
Peyton fy Val Peyton	2.65
Peyton o r Val Peyton	3.05
Flower fy Upland Dist	2.65
Flower st Upland Dist	2.55
SEEDLINGS—	
El Toreador st San Marino G P Co	2.15
Criterion o r Penn Ft Co	2.70
Criterion o r Penn Ft Co	2.75
Volunteer xc S A Ft Ex	2.75
Greyhound ch S A Ft Ex	2.35
Climax Edmund Peyche	2.60
Deal ch Edmund Peyche	2.30
BLOODS—	
Climax Edmund Peyche	3.30
Valla Vista fy Hemet Dist	1.90
Old Mission ch C C Chapman	3.85
Golden Eagle st C C Chapman	3.30
Whittier xfy Redlands Junc Dist	3.95
BLOODS (halves)—	
Bear	2.00
Quail	1.60
Valla Vista	1.30
Jaffa's Climax	3.30
TANGERINES (halves)—	
Flower	2.00
LEMONS—	
Independent fy	4.20
Independent o r	4.10
Independent ch	3.90
Criterion (budded)	2.45
Hacienda (budded)	1.50
NAVELS—	
Wolf	1.85

May 6.—The market is easier on low-grade, soft fruit, other stock selling in good shape, with good demand. Weather disagreeable, it is raining. Fifty cars oranges sold today.

NAVELS—	Avg.
Cerrito Thomp imp Corona Dist	$4.55
Colonel fy O Gr Cash A	3.60
Trade Mark st O Gr Cash A	2.40
Whittier xfy Redlands Junc	2.95
Whittier xc Redlands Junc	2.80
Fountain ch F H Speich Co	2.60
Santa Fe st F H Speich Co	2.40
Sunshine fy O Gr Cash A	2.35
Trade Mark st O Gr Cash A	2.25
Fountain ch F H Speich Co	2.45
Santa Fe st F H Speich Co	2.50
Rialto fy Rialto Dist	2.25
Broncho xfy W Amer Ft Co	2.65
Herald xc W Amer Ft Co	2.40
La Mesa xfy Riv Ft Co	3.35
Golden Rule xc Riv Ft Ex	3.50
Royal Knight xfy R H Ft Ex	3.65
Ben Hur xc R H Ft Ex	3.60
Golden Rule xc Riv Ft Ex	3.60
Quail xc O K Ft Ex	2.25
Blue Globe xfy Riv Ft Ex	2.80
Red Shield Thom imp ACG Ft Ex	2.35
Red Shield xc ACG Ft Ex	2.25
Uncle Sam xfy Riv Ft Ex	2.75
Fiesta xc Riv Ft Ex	2.65
Quail xc O K Ft Ex	2.15
Eagle xc H G Ft Ex	2.90
Alhambra fy S T Ft Ex	3.10
Don Quixote ch S T Ft Ex	3.00
Pointer xc ACG Ft Ex	2.25
Blue fy S Y Ex Fernando	2.55
Red ch S Y Ex Fernando	2.60
Green st S Y Ex Fernando	2.45
Camel Q C Ex Corona	2.60
Stork ch S A Ft Ex	2.60
Airship xc V C Ft Ex	2.30
Cal. Best xfy Cal Cit U	2.90
Taylor's Pride Cal Cit U	2.60
Sunflower xfy Cal Cit U	2.50
Trophy xfy Cal Cit U	2.65
Geranium xc Cal Cit U	2.50
Geranium xc Cal Cit U	3.05
Wildflower xc Cal Cit U	2.20
Peacock xc Worthley-Strong	2.75
Criterion o r Penn Ft Co	3.00
Geranium xc Cal Cit U	2.70

Pittsburg Market.

May 6.—The market is steady. It is raining. Sixteen cars sold today.

NAVELS—	Avg.
Golden Rule xc Riv Ex Riverside	$2.90
Golden Rule xc Riv Ex Riverside	3.05
Golden st Riv Ex Riverside	2.50
Red Globe xc Riv Ex Riverside	1.75
Blue Jay st O K Ft Ex	2.30
Quail xc O K Ft Ex	2.35
Coyote ch O K Ft Ex	2.25
Owl st O K Ft Ex	2.20
Pointer xc A C G Charter Oak	2.45
Orchard o r Nat O Co	3.40
Standard st Nat O Co	2.95
Globe xc F Swachn & Co	2.50
Palin st F Swachn & Co	1.85
Eclipse fy Malone Ft Co	2.30
De Oro o r Sparr Ft Co	2.20
Cougar ch Covina Ex Covina	2.30
Jasmine st D M Ex Duarte	2.65
Jasmine st D M Ex Duarte	2.35

SWEETS—Lone Palm, $3.20; Tourist, $2.70; Blue Flag, $3.15; Buena, $2.70; Vacation, $2.75; Deal, $2.05.

Boston Market.

May 6.—The market is unchanged. It is raining. Twenty-nine cars sold. Twenty-two cars on tracks.

NAVELS—	Avg.
Whittier fy Redlands Junc	$3.25
Whittier ch Redlands Junc	3.05
Whittier st Redlands Junc	2.95
Golden Flower xfy Red O G A	2.55
Golden Gate xc Red O G A	2.30
Redlands' Best Bryn Mawr A	2.40
Redlands' Pride Bryn Mawr A	2.20
Golden Scepter Rialto O Co	1.95
La France ch Kuns Ft Co	1.90
Royal xc Q C Ex Corona	2.00
Ostrich xfy R H Ft Ex	2.45
Ben Hur xc R H Ft Ex	3.10
Golden Rule xc Riverside Ex	2.85
Golden Rule xc Riverside Ex	2.60
Quail xc O K Ft Ex	2.30
Quail xc O K Ft Ex	$1.90, 2.00
Rose xfy Redlands O Gr A	2.75
Rose xfy Redlands O Gr A	2.75
Laverne Beauty M L Sparks	2.75
California Beauty Worthley-Stron	2.35
Magnolia Thom imp Worthley-Str	3.00
Native o r Sutherland Ft Co	2.30
McBean Sutherland Ft Co	2.00
Antler fy Patte & Nye	1.85
Topaz xc Cal Cit U	1.75
Amethyst st Cal Cit U	1.60
Rey fy S T Ex	2.95
Tunnel ch S T Ex	2.70
Urchin st S T Ex	2.45
Rey fy S T Ex	2.65
Tunnel ch S T Ex	2.40
Urchin st S T Ex	2.25

CALIFORNIA CITRUS SHIPMENTS.

LOS ANGELES, May 7.—Oranges, 149; lemons, 21. Total to date this season, 18,026 cars of which 1724 cars are lemons. Total to same date last season, 21.608 cars, of which 2471 were lemons.

For a Good, Practical Milking Machine see the O. J. Weber Co., 556-557 So. Los Angeles St., Los Angeles.

Grapes are heavy consumers of Potash, which must be renewed in the soil if the yield of the vines is to be kept up.

Potash

at the root of the vine means a profuse yield of luscious clusters on the frame.

Our free booklet, **"Plant Food,"** tells much you should know about plant fertilization. Write for it now.

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"Good Luck" in Poultry Raising

is **not** "good luck," but good management. Diseases in poultry are due to poor feeding and poor protection. Rex Flintkote will absolutely protect from cold, heat and wet. Let us prove to you that

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together with our valuable roofing booklet, on receipt of postal request. Our complete book, "Making Poultry Pay," will be sent for 4c. in stamps. It is very useful to the poultry raiser.

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DO YOU LIGHT AND COOK AND RUN YOUR INCUBATOR WITH ACETYLENE GAS? COME IN AND SEE - OR WRITE ABOUT THE NEW FEED - THAT CLEANS IN ONE MINUTE ONCE IN 6 MONTHS! WE GUARANTEE IT!

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WITH A SEIVERT OIL BURNER

You can burn 100,000 feet of air with every 130 gallons of oil; this means perfect combustion. To burn more than 100,000 cubic feet of air with 130 gallons of oil, there is a decided loss of heat. To burn less than 100,000 cubic feet of air there is a loss of fuel.
The only safe and reliable burner on the market.
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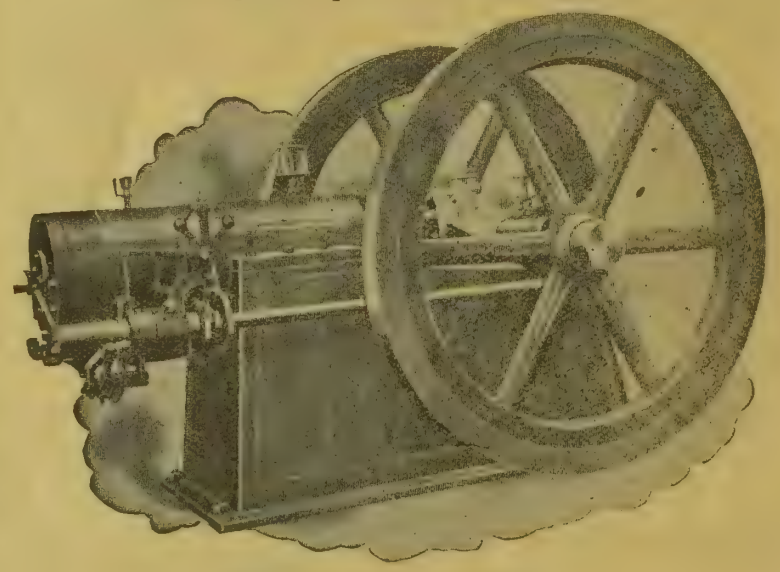
Columbus Engines

MADE BY

Columbus Machine Co., Columbus, Ohio

Have stood the test sixteen years.
The largest output in the United States



Standard Horizontal, 4 to 60 H.P.

Read what this man says about Columbus Engines:

Greenleaf-Compton Company, Tropico, Cal., 4-3-07.
121 So. Los Angeles St., Los Angeles, Cal.

Gentlemen—For about four years, I have used a Columbus engine of ten (10) horse power; which has been running a 3½ Vertical pump and pumping about 35 inches water with a 90 foot lift, and when the time came to buy a new pumping plant for my ranch near Anaheim where we we shall need water for about 200 acres, I decided to have a 60-horse Columbus engine installed, and placed the order with you because I expect to have a pumping plant that cannot be excelled.

Respectfully, E. B. BARY.

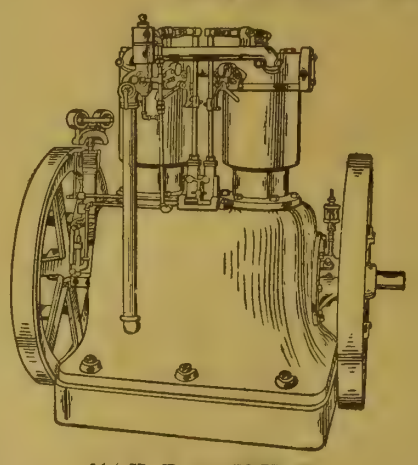
This 10-horse engine is pulling 13½ horse power. We are installing a 60-horse plant for Mr. Bary, 3½ miles north of Anaheim. Come in and let us demonstrate the simplicity of Columbus Engines.

Greenleaf-Compton Co.

121 So. Los Angeles St. **Los Angeles, Cal**

PEERLESS ENGINES

DISTILATE AND GASOLINE



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STATIONERY AND PORTABLE

For all kinds of Ranch service and special for electric lighting.

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1½ H. P. to 50 H. P.

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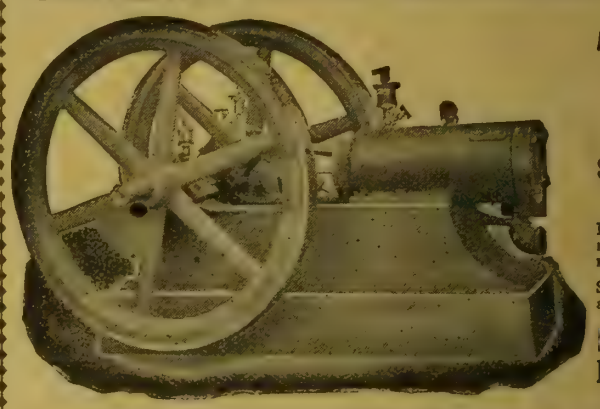
San Francisco Los Angeles Sacramento

Samson Gasoline and Distillate Engines



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Are the Best.

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Send for our new catalogue and estimates.

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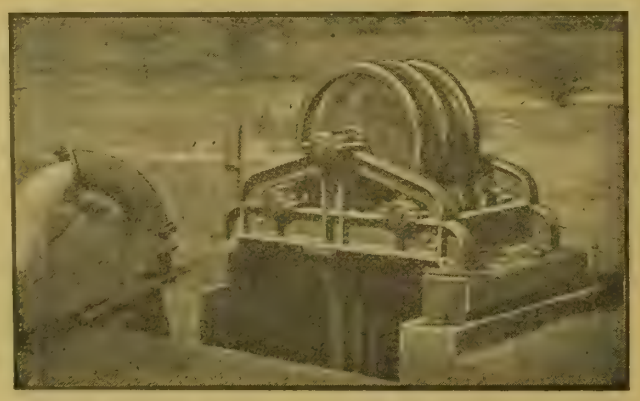
Addison Double Plunger Pump Head



It will pay you to investigate the Addison before purchasing a pump. Send for Catalogue B.

Addison Pump Company

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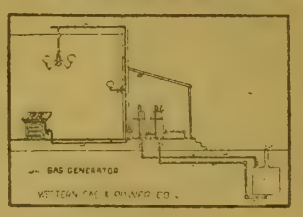

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California Cultivator

Los Angeles May 16 1907 San Francisco

Injurious Results of Immature Breeding

THERE HAS BEEN a tendency shown in the last few years, among breeders, to attempt to breed heifers before they have become mature. Especially has it been shown to be the case with many dairymen; so anxious have they been to get their herds on to a paying basis that they have seriously injured their heifers by making mothers of them at too early an age. The practice of this immature breeding has been so extensive, and is so extensive today, that in many localities mature cows in the dairy breeds cannot be found. The result is that we have been producing in California a smaller type of the dairy cow, and, consequently, a less effective cow than is to be found, in general, among the herds of the Eastern or Middle West dairymen.

The theory upon which these dairymen have based their conclusions has been that the earlier a heifer is made to produce, the sooner she brings financial returns for her keep, but it has been found by practical demonstration that too early breeding produces an immature cow, immature as to size, and naturally inefficient in milking qualities. The most successful herdsmen, in the Middle West, are those who do not undertake to breed their heifers before they are twenty-four months old. They, therefore, obtain a larger cow, with larger bone and greater vigor, and naturally get better calves and more satisfactory milking results than those who have made it a rule to breed at eighteen months.

It was a notable fact that the twenty-five Jersey cows entered in the dairy cow demonstration, at St. Louis, in 1904, were large cows. The results obtained in that test were superior to any results obtained from cows that were smaller in size and less in weight.

While it is clearly apparent that immature breeding reduces the size of dairy cattle, it is contended by some that, necessarily, constitutional vigor does not always accompany this loss of size, but experienced dairymen are reaching the conclusion, at this age, that the best and most continuous results are obtained from the breeding of mature heifers.

In Northern and Central California the subject of stock improvement is attracting more attention, as we have said, than at any previous period in the history of dairying. Farmers in the Middle States are used to large cows in the herd, both for beef and dairying purposes, and are loth to be convinced that a small cow will bring the same results that a large one will, hence we read that breeders of Holsteins and Durhams are finding a market for their bulls among the dairymen of Northern California. It is quite likely, as the country settles with Eastern farmers we shall have a bigger breed of dairy cattle, but the Jersey has been the popular cow in California and will continue to be popular, if bred up to her possibilities. The purely dairy operator is looking for the cow that will give him the best butter fat return, and he will find the Jersey unsurpassed if she is bred true and to strictly thoroughbred bulls of best type.

The same principle will apply to raising beef cattle. The beef producer is after size and bone. The above illustration refers more to beef than dairy stock; but what will apply to one will also apply to the other if size is an element to be considered.

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This will insure you healthy stock and plenty of eggs. At this time of the year a little of

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California Cultivator

Vol. XXVIII—No. 19 Los Angeles, California, Thursday, May 16, 1907 Subscription $1 a year

A Plan for the Improvement of Cattle

Extracts from an Exhaustive Report on Experiments and Observations on Too Early Breeding and Inbreeding of Cattle

By E. S. Shaw, of the Live Stock Experiment Station, Michigan

IN PRESENTING the following article from Professor Shaw, it will be noticed that the trend of his discussion is for a better grade of dairy and beef cattle. It is along the line of argument that the Cultivator has followed for several years. Breeders are beginning to realize the importance of a better standard class of cattle, not only for the product of beef, but for the dairy interest as well. We cannot hope to reach a higher degree of excellence in our animal industry on the Pacific coast, until we realize the importance of placing at the head of our herds thoroughbred bulls of whatever type it is desired to promote. Examples are numerous of successful dairying where the industry has been promoted from high-grade stock.

In the counties north of the Techachapi especially, dairymen and ranchers in general, have been paying more attention of late to the dairy bull than has heretofore been the case. The result is, that the dairies in Northern California and Central California are in better condition than they are in Southern California. It will be a glad day for California when the same interest is manifest in breeding to the highest point possible, our dairy and beef cattle, as is manifest in the sections of the Middle West.

Principles.

The presentation of this publication, at the present time, is designed to serve a two-fold purpose. First, it is intended to be preliminary to reports of animal breeding experiments of an important practical nature either now in progress at this institution, or about to be taken up. Some of this work has been under way for more than eighteen months, and many more months and several years, even, must needs elapse before other phases can be completed and reported. These investigations are being pursued with the idea of securing more definite data relating to some of the problems hereinafter discussed. In the second place, it is hoped that the following discussion may lead to the adoption of better methods in some of the commoner practices of animal-breeding, the principles of which are frequently grossly violated, quite as often through carelessness and indifference as through a lack of knowledge of them.

For the purpose of the discussion that is to follow, we shall divide the producers of cattle into two classes. First, there is that class comprising the small minority engaged largely in the production of pedigreed animals to be offered for sale for purposes of improvement; we have no criticism or suggestion to offer this class. They are by far too few and do not receive the support and encouragement their efforts deserve. There are a few who undoubtedly own pure-bred animals, but have not been keeping the registration up. On the other hand the list of owners of registered animals must include some who own but a single recorded animal, namely, a bull. The fact that these men own recorded stock is evidence enough that they are interested in live-stock improvement, and are familiar with, and are practicing good methods of live-stock breeding.

The second class, comprising by far the great majority, is the one in whose hands the inferior stocks are to be found. Because this last class comprises such an overwhelming majority of stock-owners, and because it produces nearly all the animals and animal products marketed, its influence in determining the character and reputation of Michigan meat and milk products is very far reaching. It is in the hands of some of this class that the scrub and animal of badly mixed breeding are to be found. After the few breeders of pure-bred animals have expended large sums of money for good foundation stocks, and offered good young pure-bred males at moderate prices, it cannot be denied that they are extremely slow of sale. The ordinary producer of meats and milk (not breeder) seems determined not to pay more than about meat prices for males to infuse improved blood in his herd, and the breeder can not make a living producing them at such prices. Failing to secure improved males at these low prices, many producers fall back on the grade or even the scrub, and frequently combine with this inbreeding, especially where the males are chosen within the herd. The greatest and most pressing needs of to-day in live-stock improvement, are more breeders, more good males, and more men willing to pay remunerative prices for them, and cease admixing blood, and using grade and scrub sires.

We may expect, after a few top-crosses in upgrading, that the progeny will resemble the type of the sires used in improvement quite closely, both as to form and general characteristics; in fact, so much so that the high grade may eventually equal the pure blood improver from a standpoint of utility in meat or milk-making, as the

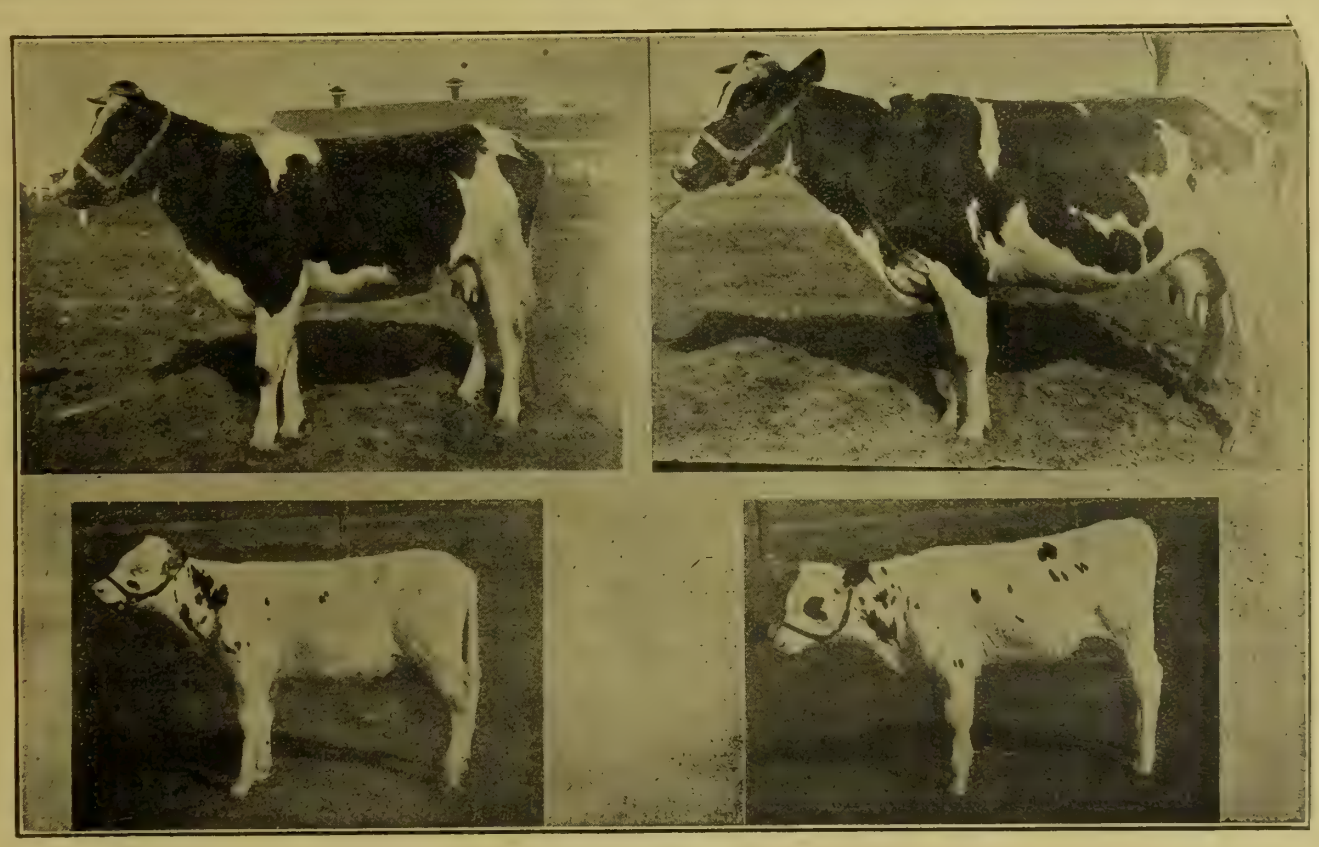

Illustration No. 4

Continued on Page 518

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P. S.—See Article in Cultivator on Page 556, issue of December 6th.

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Deciduous Fruit Culture

By J. W. MILLS

REPORT ON COVER CROPS.

THE following is a report of investigation carried on by Mr. C. S. Vaile of Claremont and made before the Claremont Farmers' Club, and is more largely of conditions in that neighborhood:

The past year has seen a greatly increased acreage sown to cover crops, chiefly peas and vetches.

This general use has come about largely through the urgent advocacy of cover crops before our clubs by some of our more alert orchardists.

The fruits of experience are the test of value. So it seemed wise for future guidance to gather the opinions of those who are experimenting with such crops. The inquiry paid special attention: To the time and method of planting; the after-treatment of the crop and soil; also an inquiry into the respective values of different cover crops and the place they hold in the system of orchard fertilization.

Local Conditions.

The study was largely local, but included a few reports, by way of comparison, from large orchardists in other districts, where the use of such crops has been more general. Their crops chiefly consist of peas and vetches, though in the less dry coast districts fenugrek is found to be satisfactory, while burr and sweet clover and the lupin seem to grow in favor. Many who planted peas last year have this year sown vetches, fully one-half the acreage planted being this kind.

Many sowed upon their faith on others' say-so, while others only experimented with a few acres. A few mixed the vetch with the peas, while others cross-sowed with burr clover.

Vetches First.

The preference seems to be for vetches. The reasons assigned: "They cover the ground better, root deeper, form a greater mass or roots, seem more hardy, will better stand rough treatment during fruit gathering, need less water, plow under better and more easily, and, while needing longer time to decay, they probably supply more humus, possessing the finer fiber." The results of mixing vetches and peas and at times barley were very satisfactory. The barley prevents the ground from washing by the early rains and later forms a support which aids the other crops in their growth. Some growers declined to express a preference until they could note comparative results. One large rancher used peas on the level clean land, but sows vetches on hilly, foul land, for they better prevent washing of soil and keep down other growths.

Experiment a Little.

It is suggested that more orchardists might emulate the example of some of those having charge of large orchards and experiment for themselves with different kinds of cover crops. The time and methods of planting varied somewhat, though this difference came more from circumstances than from opposing views. The crops were sown from the latter part of September on through October and November, but chiefly in October. The earlier sowing has the preference, provided early rains or irrigation permits. Even should the ground continue dry, the vetch seed and clover, at least, will remain dormant ready for spring when rains do come.

How to Plant.

The method of planting varies little. Hard ground should be plowed, then thoroughly irrigated and cultivated, the seed drilled in or broad-casted, better the latter in old orchards, 40 to 60 pounds of vetch to the acre, then the ground furrowed shallow, for future irrigation as needed.

These cover crops were grown in all sorts of soil, from light, sandy loams, through gravelly, to clays and adobe. Crop this year was abundant and often luxuriant. The growth was good early in the season and such early growth gave a vigor to withstand the colder weather later on, when vetches, at least, made little or no growth unless it be in rooting. The growth in March and April was great, for the season was ideal for vegetation. Little reference was made to the size or abundance of the nodules, which should have special attention as indicating the specific work of these nitrogen conserving plants as related to that special field.

Turning Under.

The time of turning under the crop will be partly determined by the time of sowing and the method will vary in keeping with the equipment of the ranch. Evidently cover crops will make a demand for disc harrows and plows, for while the ordinary plow can turn under even a heavy crop of vetches, the disc seems to do the neater and in every way more satisfactory work. Ranchers with small acreage may find here a chance for cooperative farming.

This plowing began in February with a fortunate few, but in most cases extended through March and April, while some fields are still unturned, offering, I fear, some perplexing problems in the summer's cultivation.

Where the crop is not too heavy it may be thoroughly disc harrowed, then plowed; the heavier crop demands the disc plow. After being plowed one way, the land should lie for some three weeks, when it can be cross-plowed and then soon can be shaped by the cultivator for irrigation.

Mission of Cover Crops.

This query brought various answers, some of them, perhaps, based more upon theories than being the outcome of personal observation. The question is important and it may require several years of comparative study to learn whether such cover crops supply nitrogen in sufficient quantities or in excess of need; whether roots and vine provide abundance of humus; whether the nitrogen thus gathered and made available from the atmosphere in the earth also liberates in the soil other fertilizing elements essential to successful culture or, in deed, whether barnyard manures or commercial fertilizers were best fitted to supplant the cover crop.

I quote some of the replies given. "First place." "Not any." "At the top of the list." "Equal to a coat of manure." "Merely a humus maker." "If planted both ways it largely supplies the nitrogen and the humus." "Indispensable in producing nitrogen and humus." "For young trees no additional fertilizer is needed, unless it might be for Valencias and lemons after the age of ten years chiefly valuable for formation of humus." "Expect some results from nitrogenous food but most results from humus added."

Mr. C. C. Teague writes: "First place, supplemented by commercial fertilizer. Should supplement but not take the place of fertilizers, except possibly, in a measure of nitrogen." Another said: "More to supply humus and prevent irrigation hard-pan than distinct food for trees."

In the open discussion emphasis was laid on the value of cover crops in eradicating hard-pan in the orchard. "Cover crops secure nitrogen and furnish humus which will help to set free the potash and phosphoric acid already in the soil in abundance. It will not alone supply the essential soil elements, but in time may take the place of some of the heavy fertilizing."

In spite of these differences of opinion, all purpose to continue planting, and nearly all seem content with the one inoculation or to the tubercles found naturally in the various clovers and legumes.

Some of the suggestions offered may be of value. Cover crops are a great saving of labor and for winter use at least are a great gain to the orchard. Burr clover grows in favor as having power to renew the land and as being self-seeding. Early planting, which should be drilled in to avoid loss of plants from drying out, will give the crop a start sufficient to maintain growth in the cold weather.

The capacity for producing nitrogen seems to be self-adjusting, for if nitrogenous fertilizers are used with the crop large growths result for plowing under, but the supply of nodules

on the roots will be decreased, while the finest nodules will be found in soil poor in nitrogen. Thus we see here an illustration of the remedial power in nature.

In Conclusion.

It would seem that our ranchers are determined to give cover crops a fair trial. Experiments in various kinds of plants should be carefully noted, with the different treatment accorded them and the fertilization used as a supplement. Would it not be wise to report their results until facts have become generally known and the use of cover crops has been put on a scientific basis and present guesses shall become knowledge? Special attention should be given to their province in gathering nitrogen and forming humus and to learning just what is their function in the matter of fertilization. The effect upon the soil of the previous year's crop must be noted and would it not be well for a few ranchers in every district to make varied experiments with cover crops as is being done by the management on some of the larger ranches?

THE CROP BENEATH THE SURFACE.

Without the crop below there can be no crop above the surface. And it is not surprising that there are weeds to destroy the crop below just as there are weeds to struggle for supremacy above.

Soil fertility—what is it, what makes it, and what destroys it? Fertility means the chemical elements necessary to plant growth, so proportioned as to make a complete plant food, and so arranged as to be available. Plants live as we live—on prepared food. We go to a hotel. It contains the food necessary and at the right time the cook prepares it, and if we have paid the price the supply is at our command. At other times the food is raw, and locked in the store house where we travelers can't get at it.

Plants grow by taking up certain amounts of carbon, oxygen, nitrogen, phosphorus, sulphur, iron, potash, etc. But these things are locked in the soil and it takes the assistance of the soil chef and steward to make the supply available and palatable—if we may use that term in this connection. The stewards and chefs of the soil are microscopic plants—bacteria—of different kinds that change the raw material of the soil into available plant food. They attack the chemical compounds and unlock the simple elements they contain so the plant roots can absorb them.

This crop of bacterial plants beneath the surface of the soil needs cultivating just as the crops above. They require air, warmth, moisture, food, and a certain condition of the soil or they will not multiply and aid the larger plants to get their food fast enough. Soils don't generally lack fertility. It is estimated that there is enough nitrogen in the average soil to last nearly a century, enough phosphoric acid to last about 500 years and enough potash to last twice as long. But the little stewards hold the keys and will not let the plants help themselves to these things. So it is a question of how to grow the crop beneath the surface that we may get a crop above.

We well know that if we get oats thick enough they smother out the weeds, or if we let weeds have right of way in the cornfield or potato patch we get no crop. We well know that if we let a crust form on the soil that air can not reach the roots and the plants do not thrive. This lack of air checks the growth of soil bacteria that are making plant food, so if they go on a strike for lack of air the crop depending on them must wait until they resume work. Cultivation is necessary to get air to the crop of microscopic plants below. We know, too, that if we let too much moisture leave the soil the crop withers. We have killed or checked the growth of our crop below so the food supply is cut short. Conservation of moisture is necessary, then, for other reasons than we usually give.

Ground may be too wet. It drowns the bacteria, or maintains such a low temperature that they do not thrive. These little plants need a temperature between 60 and 80 degrees. Drainage warms the soil earlier in the spring and puts these little friends to work preparing food for the coming crop.

Another thing: if the soil is too sour the right kind of bacteria fail to grow and weed bacteria take their place. Or it may be so acid that neither thrive and plant life is checked. On the other hand soils may become too alkaline for plant life. This is seen in the alkali regions of the west. Soil bacteria do best in a neutral or slightly alkaline soil and anything that throws it out of balance is poor farming.

Some bacteria are weeds: they are not desirable at all. For instance, there are denitrifying bacteria that attack the nitrates in the soil and break them up into nitrites and free ammonia or free nitrogen. It escapes and is lost. These bacteria grow best when oxygen is scarce. Thus a crusted soil favors the growth of these little enemies—weeds beneath the surface. Good culture thus prevents a loss of nitrogen.

Soil bacteria need feedling that they may get a start. Thus an application of manure aids them when conditions are a little adverse. But the application of manures must be wisely made that this valuable substance be not wasted or consumed by the weeds in our bacterial family.

The manure spreader, applying the manure daily, is the best method to feed plants and avoid loss of manure. It cannot then heat or leach away, or the nitrogen be consumed by the nitrifying bacteria it contains.—Successful Farming.

FARMERS' INSTITUTE.

J. B. Neff, conductor of the Southern California Farmers Institute, announces an institute at Ventura on June 24-25, and one at Fillmore, June 26-27. Pomona is also slated for one either following or preceding those two.

Prof. R. H. Loughridge of Berkeley will lecture on the chemistry of soils and Dr. S. S. Twombly will lecture on commercial fertilizers, and tell how to buy and use them. Other good features are promised.

THE DROUTH IN CUBA.

The Cuban shortage in rainfall seems to be as bad, if not worse, than our own, inasmuch as it is said to be worse than has been experienced in the last sixty years. It covers the entire island so that sugar and tobacco sections as well as those devoted to minor culture, and pasturage are suffering alike. No cane can be planted. Cattle are dying of hunger and thirst; wells are dry and the outlook for crops bad. There will be a great falling off of cane, tobacco, garden produe, oranges and pineapples.—Florida Agriculturist.

When shingles have warped, split or burned—when coal-tar has crumbled and melted—when tin has rusted away—you will wish you had put on

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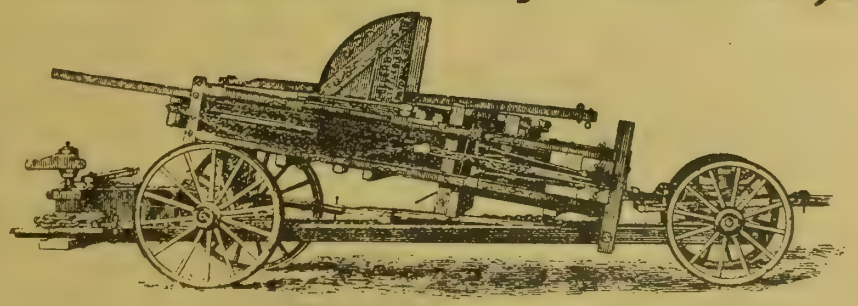

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SAVES WATER, GRADING AND TIME

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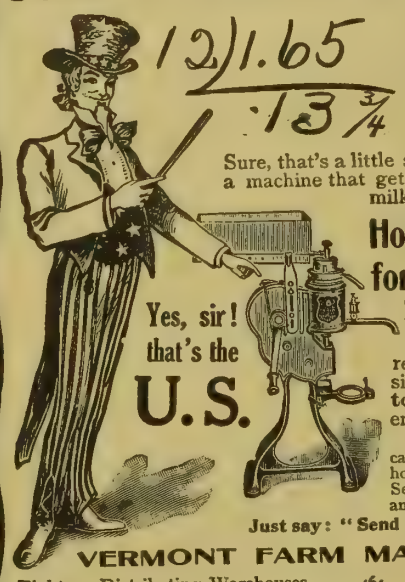

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Office—730 S. Spring St. Los Angeles

Live Stock and Dairy

IMPROVEMENT OF CATTLE.

(Continued from First Page.)

case may be. There is some question as to the number of crosses that must be produced before this high standard of excellence will be secured in the grade. This will be somewhat dependent on the duration of the purity of the improving blood, the prepotency of the individual sires, and the plasticity of the common females. Instances are on record where ideal high grades have resulted from the third cross; in general, one would be safe in counting on at least the fifth. We must not, however, lose sight of the fact that while a high grade may eventually equal the improving breed from a standpoint of meat or milk-making, that it can never be possessed of a pedigree, nor equal the full bloods for a standpoint of prepotency in breeding; this is the principal argument used against grade sires.

In illustation on cover four yearling females are shown. The two in the upper row are pedigreed Shorthorns bred from college stocks; the one in the upper left hand corner, Sharon Princess, sired by Grenallen was not possible to trace the sires of individual calves. While these two grade heifers illustrate well the possibilities of up-grading, it is unfortunate that the number of generations since their improvement began can not be determined. We again remind our readers of the statement made in a preceeding paragraph relative to the possibilities through up-grading, and leave them to judge for themselves to what extent the illustration bears out our argument.

Breeding experiments are now in progress at this college to determine how many generations must be produced before animals can be secured equal to the improving breed, from a standpoint of utility, but some years must elapse before results can be secured.

We also suggest that at the time of the purchase of the pure-bred sire, one cow, or possibly two of the same breed be secured. The progeny of these two or three registered animals should grow into a nice little herd at the end of ten years, which could be used to replace the poorer of the high grades. That the high grade can be successfully produced as described

Illustration No. 2

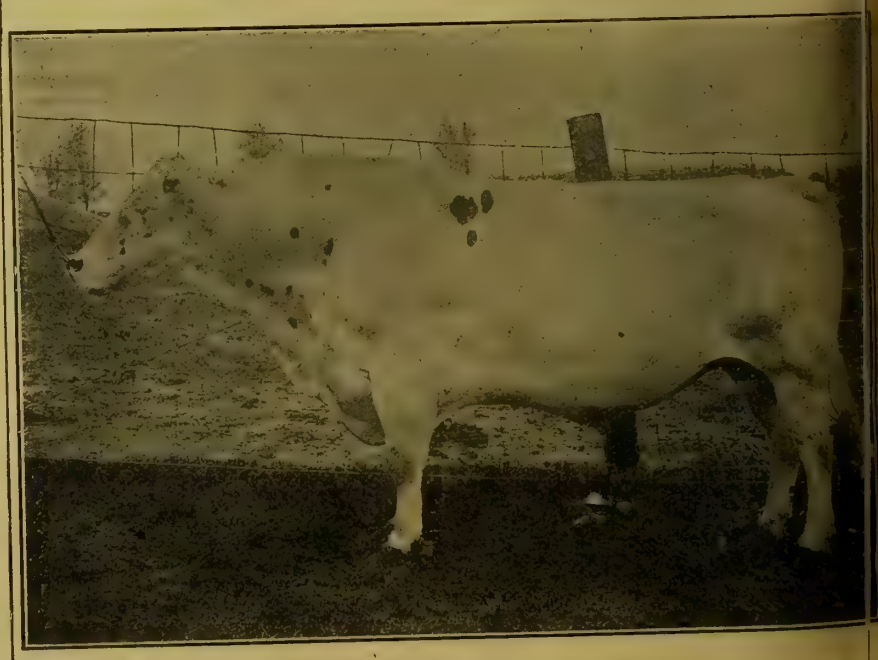

Illustration No. 3

38892, out of College Sharon, Vol. 49, page 949; the one in the upper right-hand corner is Mysie's Opal, sired by Gwenallen, and out of College Mysie 5th, Vol. 40, page 753. The two females in the lower row are simply high-grade Shorthorns which are out of Shorthorn grade cows purchased in Tuscola county, Michigan, by the Michigan Agricultural College in the fall of 1904; as the cows were in calf at the time of purchase and as the carload was picked up one by one, it can not be disputed, and its value have already been clearly demonstrated. The high grade forms the bul of the Western feeders coming to ou feed-lots; it makes up almost the su total of the 400,000 prime steers whic annually cross the Atlantic; it ha occupied no mean place in the list awards in fat classes at State, Na ional, and International live-stoc shows.

We desire at this point to emph

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80 Acres of No. 1 Alfalfa in its second year, to rent for a term of years at a reasonable price. Cash or share rent, as preferred. All under irrigation from Butte County Canal. One mile to nearest railroad station and two creameries close at hand. Address

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For Sale Our Herd Bull Sargent Fox, 64833

As we have dispersed our herd, except a few heifers for home use, we are forced to offer for sale this valuable sire. We will sell him at a low price to a breeder who is in a position to give this bull a chance to make a record.

Leffingwell Rancho. Inc., Whittier, Cal

Geo. C. Roeding, Fresno, Cal., breeder of
Thoroughbred Holstein Bulls and Heifers
Thoroughbred Berkshire Boars and Sows

size the fact that the use of improved methods of breeding alone will not avail; it is absolutely necessary for these to be supplemented by liberal feeding and proper care and management.

Discarding the So-Called Aged Bull.

In general, it can scarcely be said of a bull, that he has reached full maturity until 4 years old, though this perfect stage of development is commonly regarded as being attained at a somewhat earlier age among some breeds. It has been a common practise for years, among farmers, to send the 3 or 4-year-old bulls to the block, largely because there is no sale for them as breeders. The general rule among prospective purchasers is to search for nothing but young bulls, yearlings or less, with the idea that they will grow into money for them, if they can dispose of them before maturity. It is false economy to purchase on this basis solely and take more or less chance on a young, untried animal when the actual results from a mature animal may be ascertained. There are two principal reasons why sires are usually sent to the block at 3 or 4 years of age. First, it is claimed that their dispositions do not mellow with age, and second, they become too large, heavy and clumsy, and it may lead to impotency. In answer to the first of these objections, we believe that except for the inheritance of mean, treacherous dispositions, bulls, in general, return on the points of their horns only that which is dealt out to them on the points of the fork, or in other words, the bull responds to the character of the treatment and management given him. Mature bulls should not have a tendency toward impotency if properly fed, managed, and exercised, but because of the fact that the bull is isolated, he is frequently neglected to a greater extent than any other animal on the farm. Too many bulls are fed irregularly and improperly, and confined constantly for long periods in small, dark, filthy box stalls; these conditions are not conducive to good breeding qualities.

There are some decided advantages in purchasing mature bulls. One of the greatest of these is found in the fact that the buyer can ascertain something relative to the character of their get; this is most important to the breeder of dairy stock. Another advantage arises from the fact that there is always more or less uncertainty regarding the future development of the bull calf, while this factor is entirely eliminated in the purchase of a mature sire. It is also not unreasonable to conclude that a mature sire will beget more vigorous offspring, especially because the young ones are frequently used to excess. Three and 4-year-old bulls can generally be secured at very reasonable prices. Some of the best show cattle we have seen were sired by bulls far past the mature stage. The expert breeder appreciates the value of mature sires. Attention is directed to the Shorthorn bull, Gwenallen, shown in another column, now 10 years old and in active service in the college herd; also Count Colantha Alban, 8 years old, illustration No. 3, at the head of the college Holstein herd.

Illustration No. 2 represents an Ayrshire cow calved September 20, 1900. By the time this cow was 37 months of age she had produced her second calf. In October, 1903, this cow weighed but 718 pounds, when in about the same condition of flesh as that shown in the illustration. Ten or fifteen years ago when dairy cattle were not bred to produce at such early ages as at present the average weight of mature Ayrshire cows was about 1000 pounds.

Cross-Breeding.

A cross-bred is the progeny of two distinct breeds. Though there has been an indiscriminate mixing up of the blood of various breeds, cross-breeding in its strictest sense is not prevelant, owing to the small number of pure-bred females in existence. The grades of the various breeds, however, are crossed frequently. The pratice has been stimulated by sudden and somewhat prolonged fluctuations in market values; a depressed dairy-market leads to more or less crossing of beef blood upon dairy types and vice versa; an increased price for the longer and coarser staples of wool always causes more or less crossing of coarse wools upon fine wools, or the reverse, as the case may be. No breeder can make such radical changes as these, frequently, for every time he alters his breeding operations so radically in trying to meet market fluctuations, he introduces factors leading to the final deterioration of his breeding stocks. It is much safer to choose some definite line of production, and stand by that through the temporary ups and downs of the market; the men who have done this have made a success of animal-breeding. It would not be sensible to say that no changes should be made in one's breeding operations; if a man is sure he has made a mistake, the only rational thing to do is to make a change, but these should not be made often, as they are usually attended by some loss. The progeny from some first-class crosses have shown highly desirable results, and while cross-breeding is more justifiable in the production of market animals. it can not be employed contin-

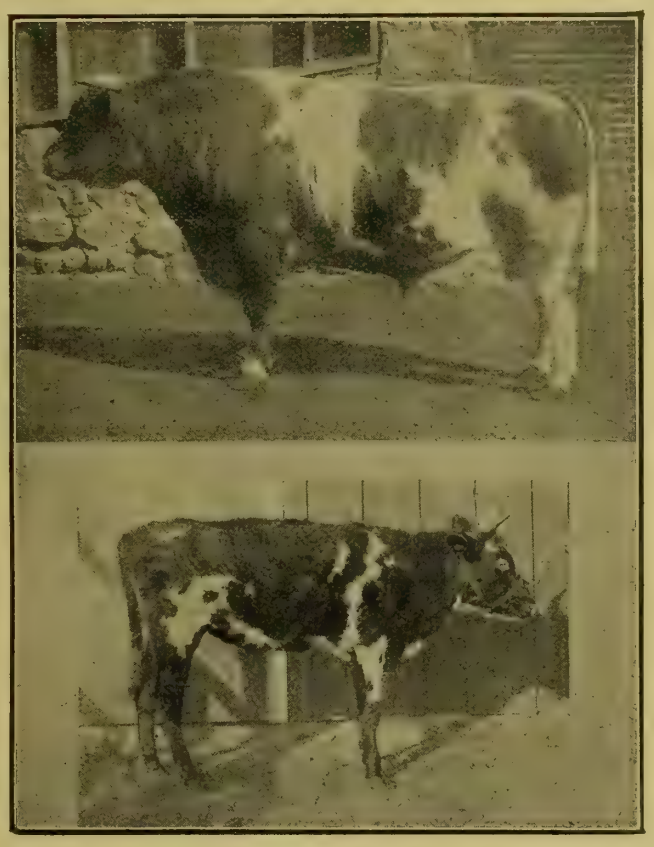

Illustration No. 1

Cream Separators, all sizes, all prices. O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

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If you would have your harness rain-proof, sun-proof, sweat-proof, soft, strong and pliable, use

EUREKA Harness Oil

Makes old harness look like new. Preserves the looks of new harness. Contains nothing to cut and chafe. Will not rot stitches.

To reduce axle-friction to an absolute minimum use

BOSTON COACH AXLE OIL

Superior to castor oil and more economical. Does not gum or corrode. Highest Award World's Columbian Exposition. *Sold everywhere—all sizes.*

MADE BY
STANDARD OIL COMPANY
Incorporated

MILK CANS ROB YOU

Look through a microscope at milk set to cream in pans or cans and you'll see how they rob you. You'll see the caseine—the cheese part—forming a spidery web all through the milk. You'll see this web growing thicker and thicker until it forms solid curd. How can you expect all the cream to rise through that? It can't. This

caseine web catches a third to half the cream. You stand that loss just as long as you use pans or cans for they haven't enough skimming force to take out all the cream. But, just the minute you commence using a Sharples Dairy Tubular Cream Separator, you stop that loss.

Sharples Dairy Tubular Cream Separators have 10,000 times more skimming force than pans or cans, and twice as much as any other separator. They get all the cream—get it quick—get it free from dirt and in the best condition for making Gilt Edge Butter. Caseine don't bother the Tubular. The Tubular is positively certain to greatly increase your dairy profits, so write at once for catalog I-260 and our valuable free book, "Business Dairying."

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FOR SALE—RICHLY-BRED YOUNG bulls from cow having High Official Yearly Records. Also a few heifer calves of best breeding. For particulars address

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Young Stock For Sale

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Better have seeds at hand for planting time—saves delay

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Most complete stock in the West, embracing everything new of decided merit in both vegetable and flower seeds. Headquarters for Eucalyptus and other tree seeds. Full line of Fruit Trees and Ornamental Stock. *Write for Our 1907 Catalogue.*

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Germain Seed Co.
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Plant Now
Strong, Field-Grown Roses
56 Varieties
To Select From. *Price, $2.50 to $3.50 per Dozen,* according to size. Write for List—it's free.

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PLANTS AND BULBS
THE NEW SEED STORE
Everything Fresh and of highest Quality.
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Morris & Snow
555 SOUTH MAIN ST.
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When writing advertisers mention Cultivator

The Ornamental Garden

By ERNEST BRAUNTON

THIS MONTH.

IF YOU haven't already done so, make a back-yard lawn. Too many farm homes have no patch of green to rest the eye, to give a cooler, more restful appearance, or, to be more prosaic, to sun the linens of the housewife.

It's not easy to make a fine, large lawn, but while waiting for that, spade up the back yard, thoroughly wet, level or smooth off, sow a pound of blue grass to each 200 square feet, mulch with a half-inch of the dry dust scrapings from the dairy yard, wet two or three times a day for a month or two and see what a beauty spot you have. It will beat the bare, hard-trodden back yard in appearance and the clippings give a fresh taste of green to the poultry now and then.

It's already late, so get busy.

Amongst other work this month chrysanthemums are planted in the open. All other summer flowering plants, like Verbena, Petunia, Balsam, Zinnia, take the place of the winter flowering bulbs which are stored away in a cool place for the next season. The planting of carpet beds of Coleus, Iresine and Acheranthus still goes on this month. Dahlia, Hollyhock, Amaryllis, Azapanthus, Canna bulbs will bloom all summer if planted this month. Special care should be taken to have the ground manured heavily with old manure, and that these plants get plenty of water, as they must be kept growing vigorously in order to have a profusion of flowers.

WATERING HOUSE PLANTS.

See that your flower pots have proper drainage, and when you water, do it most thoroughly. Air is as necessary to the roots of a plant as it is to the top, and when confined in a pot soon loses its life-giving properties, and must be changed. You may drive out the foul air by a thorough watering and then when the water dries out it will be replaced by fresh air, thus giving perfect ventilation to the soil.

Having this knowledge we should avoid light sprinkling, except for the benefit of the foliage, for as far as the soil conditions are effected, the benefit is almost nothing. What is worth doing at all is worth doing well; see that the drainage is free enough and the watering thorough enough so that this all-important work of aeration will be performed.

A RED, WHITE, AND BLUE DESIGN.

Where is your patriosm?

Why not symbolize it by having a red, white and blue flower bed as a certain Grand Army man has.

A walk leading to a pleasant seat in the garden is bordered on one side by an old-fashioned "ribbon bed," as they used to be called—that is a border in stripes each stripe a distinct, low-growing flower.

The thing to be careful of is that the plants grow to equal height and blossom at the same time. Plant a border of blue lobelia which you have previously started in the house. Let the next row be white alyesum which you plant in the open ground. The third row should be if possible be red phlox, but you must start it in the house in order to have it in bloom in time. If you cannot count on phlox of the distinct red color, of course red geraniums can be used, but you get no such mass of red as you do with the phlox. Red portulacca will do.

Don't hestitate to use the shears every day or two so as to keep the surface and the lines even.

At the end of the walk is a seat under an arch of blue and white morning-glories (there might also be red ones). Before the seat is a circular bed. (It would have been prettier if a star of red, white and blue).

It is six feet across. A mass of scarlet salvia three feet in diameter is in the center. Around this are white candytuft and white petunias covering the whole bed except the low-growing border of blue lobelia.

To make a star bed a circle of the desired diameter should have been drawn by driving a stake in the ground at the middle point of the bed, fastening a cord loosely to it with a marker fastened on it just far enough away to mark around this center a circle of the right size.

Having gotten the circle, a piece of twine long as its circumference should be divided into five parts. With this as a measure, mark off the circumference into five parts. At each mark will be a point of the star.

Lines drawn between alternate points will complete the star.—Kansas Farmer.

PANSY CULTURE.

The bright little pansy face which greets one from its flower bed is a flower loved by all. It is called "Heart's Ease" and is only the big sister of the humble little violet. It is wise to buy only the best seeds, for there is a vast difference between the fine and hybrid species. It is best to start pansies in the house, and this is how one woman starts her young plants, and they are always large and beautiful. She bakes the dirt in the oven, which kills all the weed-seeds and tiny bugs in the soil. Then this is sieved, mixed with sand, then shallow cigar boxes are filled with the mixture. Pansy seeds are sown, but in this case it is best to cover them slightly with the soft earth and moisten slightly by absorption from the bottom of the box or the seeds may all sprout in one place. As they grow and develop, select only the strongest for the flower beds. To make pansies flourish they should be sheltered from all but the morning sun, blossoms must be picked each day, for it is earnest in propagating its own species. They like moderately rich garden soil, and repay any kindness shown them in beautiful flowers.—Woman's Daily.

CLEMATIS.

California contains two very desirable species of clematis. We grow many vines not nearly so well adapted to our climate and as many that are less ornamental. The lowland or valley species (C. ligusticifolia) bears a profusion of small, white flowers and is neat and graceful in appearance. The foothill species (C. lasiantha) is a beauty and is superior to any of the small flowering species from other lands. It bears a profusion of cream-colored blossoms, so profuse in many cases that at some distance the tree over which it climbs looks as though draped with a mantle of cloth. Either species is easy to transplant in late fall or early spring.

ROCKWORK IN THE GARDEN.

Rockwork plays an important part in the landscape gardener's art. But great undertakings which require skilled artisans, an endless amount of stone and much expense are confined chiefly to public parks and gardens. Boulders artistically arranged about a fountain, with a leafy canopy overhead, are for the favored few; but a few stones judiciously placed are within the reach of the majority and will afford more pleasure in proportion to the time consumed in the making and in space occupied than could be obtained in any other way.—Garden Magazine.

Don't let the spring go by without planting something that will be permanent. Teach the children to each plant a tree, care for it and learn to love it. Show them the value of trees, not only commercially, but for comfort, beauty and health.—American Farmer.

If the cut worms are ruining the plants, slake about 5 pounds of good, fresh lime and add an ordinary sized wash tub full of water. Wet the ground about the plant with the lime water. It is said to fix the worms at once.

To prevent mildew spray bushes soon as leaves appear and several times during the summer with potassium sulphide (liver of sulphur) one ounce to four gallons of water.

Sanders-Arnott
Orchard Disc Plows

Forty-five of these plows have been sold by one agent at Riverside this season.

Used and endorsed by Arlington Heights Fruit Co., Riverside, Cal.; Chase Nursery Co., Riverside, Cal., and hundreds of other prominent orchardists throughout Southern California.

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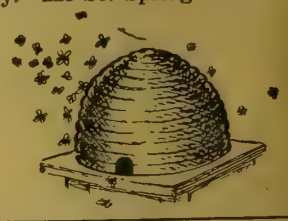

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The Vegetable Garden

By ERNEST BRAUNTON

TREATING POTATOES FOR SCAB.

POTATO scab is a disease produced by a fungus. From the farmer's standpoint, however, the fungus is sufficiently well-known to enable him to guard against its ravages. The spores of the scab fungus are capable of living in a soil for a considerable time even without the presence of potatoes. They will also maintain their power of germination when packed away in manure. From this it naturally follows that soil which produced scabby potatoes last year should not be used for the potato patch this year. It is also plain that manure which is apt to contain spores of the scab fungus should not be applied to the potato patch this spring. A popular belief prevails that lime produces potato scab, and that barnyard manure does the same thing. This is an errouneous opinion because nothing can produce potato scab except spores of the scab fungus. This scab fungus, however, thrives best in an alkaline soil and a heavy coat of barnyard manure or a dressing of lime causes the soil to become alkaline, consequently, if there are spores of the scab fungus in a soil that has been treated with lime or a heavy dressing of barnyard manure, the conditions of that soil favor the growth of the scab fungus. This fact is the cause of the popular belief that lime and barnyard manure are direct causes of the potato scab.

A poorly drained soil favors the growth of the scab fungus, because such a soil is sure to have an alkaline reaction. In view of these facts it can readily be seen that it is not desirable except in localities where scab is not known, to manure land heavily for potatoes just prior to planting, nor is it desirable to give such land a dressing of lime. A well drained soil should be selected for the same reason as explained above. We speak of these things because unless the soil is reasonably free from scab fungus, treatment of seed potatoes with formalin, as recommended below, will do comparatively little good. It is just as important to rotate potato crops as it is to rotate other crops on the farm.

Treatment of seed potatoes for scab is as follows: For each 40 or 50 bushels of seed potatoes purchase at your local drug store one pound of formalin guaranteed to contain 40 per cent. of formaldehyde. Put this pound of commercial formalin in a barrel containing 40 gallons of water and thoroughly stir the mixture. Before cutting the potatoes put a convenient quantity, say from one-half to three-fourths of a bushel, into a gunny sack and immerse the sack containing the potatoes in the formalin solution mentioned. Leave the tubers in the solution for one and one-half hours, then remove, drain and spread them out on a clean floor or blanket to dry. As soon as they are dry they are ready to be cut and planted. Remember that formalin is not a poison and that there is no danger in handling the potatoes after they have been treated. Forty gallons of this solution is sufficient for treating from 45 to 50 bushels of potatoes. The solution, of course, may be used over and over, that is, after one lot has been soaked in the solution it may be removed and another added until the number of bushels mentioned have been treated in the quantity of liquid recommended.

Bear in mind that if you plant scabby potatoes on clean land you are sure to harvest scabby potatoes. If you plant potatoes, after having treated them with the formalin solution mentioned, on land that contains scab fungus spores, you will be little, if any, better off as a result of the treatment. In order to get a crop free from scab, you must plant potatoes free from this disease on clean land. If you will do this you need not fear harvesting scabby potatoes regardless of the character of the season. It does not matter whether the season is a wet or dry one, whether the land is rich or poor, unless spores of the scab fungus can get into the ground either through the seed or through soil infected with them, you cannot secure scabby potatoes. It pays well to treat seed potatoes for this disease.

ORIGINAL HOMES OF POPULAR PLANTS.

There are several classes of immigrants of which no records are kept by the department over which the United States Commissioner of Immigration presides; but they are immigrants that, in their own quiet way, have done much to make the new world more like the old. These are trees and plants; and if the new world has drawn somewhat heavily on the old in this particular, it has paid its debt in kind. The following are some of the immigrants:

Celery originated in Germany.
The chestnut came from Italy.
The onion originated in Egypt.
Tobacco is a native of Virginia.
The nettle is a native of Europe.
The citron is a native of Greece.
Oats originated in North Africa.
The poppy originated in the East.
The pear and apple are from Europe.
Spinach was first cultivated in Arabia.
The sunflower was brought from Peru.
The mulberry tree originated in Persia.
The gourd is probably an Eastern plant.
The walnut and peach came from Persia.
The horse-chestnut is a native of Thibet.
The cucumber come from the East Indies.
The quince came from Crete.
The radish is a native of China and Japan.
Peas are Egyptian origin.
Horse-radish is from Southern Europe.

PROTECT YOUNG TOMATOES.

When setting out your tomatoes some sort of shade should be provided for a short time until the tender plants can get firm roots in the new soil. Don't look for tin cans and boards all over the place.

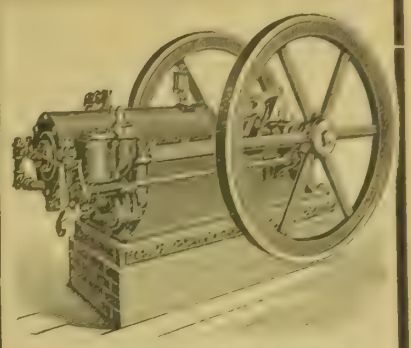
But take a few old newspapers and tear them in sheets about one foot by eighteen inches and put them over the tender plants and fasten them by means of clods laid on the four corners. This is much better than cans for it allows the air to get to the plants and does not bleach them, and when the plants are rooted, in two or three days the clods can be kicked off and the wind will quickly dispose of the papers, and there will be no cans to carry off again. A Subscriber, Covina.

GO FOR THE DIABROTICA.

Striped beetles, which appear early in the game and attack your cucumber and melon vines, are like Kipling's "Fuzzy Wuzy," that isn't afraid of "the British infrantee." As a repellant use a tablespoonful of bisulphide of carbon with a quart of air-slacked lime; sprinkled around the vines it is suggestive of a Chinese bomb to them. If, however, they do not take the hint, make a small tent, or, if vines are not large, invert a wash tub over the vine, and then put a tablespoonful of the bisulphide in a saucer and place it under the tub, closing it down tight by putting earth all around the rim. This will kill the aphis and other insects that trouble the plants. Remember, always, the bisulphide is inflammable, like gasoline.

Procure good seed of reliable seedsmen, no difference what varieties you decide upon. There is very great improvement made in vegetables as well as in other things, and the best is the cheapest is surely true in procuring seeds if in nothing else. Get the best, then give the best of care. With these two "fors" the garden will look well, no difference how many "againsts" there are, except annihilation, and if weather is favorable your garden will be a beauty spot as well as a money spot. Well grown vegetables are surely a nice sight.

There was a fair maiden Rose,
Whose actions were quite lachrymose;
When she saw a sad play
To sobs she'd give way,
And tears trickled down to her tose.



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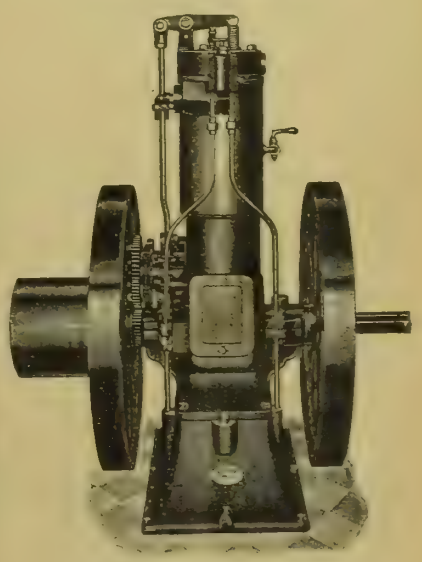

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1¼ inch.....	3c per ft.
2½ inch.....	4c "
4 inch.....	5c "
6 inch.....	7c "
9 inch.....	10c "
13 inch.....	15c "

COATED

1¼ inch.....	4c
2½ inch.....	5c
4 inch.....	6½c
6 inch.....	8½c
9 inch	12c
13 inch.....	17c

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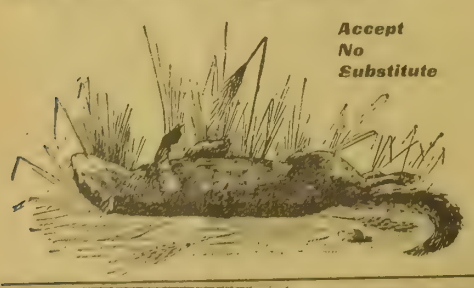

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IT DOES THE WORK

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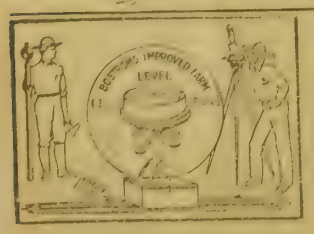

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COAST AGENTS.
Send for Circular.

California Horticulturally

SEASONAL CONDITIONS.

FROM a Santa Clara valley correspondent comes the following notes of conditions now prevailing in that valley:

There are no two seasons alike in California and the present proves no exception to the rule. After the long continued rains extending well into March, we have had fair weather without ceasing.

Fruit growers have been put to it to get their orchards plowed or cultivated before the soil was too hard to work properly.

These conditions coupled with an apparent shortage of teams, has resulted in some instances in exhorbitant charges for team work. As much as $7 per day for man and team has been paid, when ordinarily $3.50 per day has been the charge.

Crops of fruit are generally light. Prunes in this section not more than 25% of last year's crop. Cherries generally light. Peaches perhaps 50%. Cots perhaps 1% of a good crop.

Sown grain crops look poorly generally, while volunteer grain looks better than usual.—H. G. Keesling, Edenvale.

BETTER THAN GRAFTING.

H. C. Keesling, of Edenvale sends to Cultivator readers the following valuable hint:

He is a poor fruit grower who does not add something to his knowledge, as the seasons go by. The longer one has been raising fruit the more willing he becomes to admit that he does not know it all, and is glad to learn something new.

How to cover the cuts on trees made in pruning, or the barked trunks caused by careless cultivation, was for many years a problem with us. Of course grafting wax made of one pound of linseed oil, two pounds of beeswax and eight pounds rosin can hardly be excelled for covering wounds, but it is too expensive for general use. Paint of all kinds we discarded years ago as ineffectual and expensive. Coal tar fresh from the gas works warmed and put on with a brush is second in our estimation to the mixture which we now use with great satisfaction.

It is simplicity itself: Melt rosin in one vessel and warm a little crude petroleum (the heavy fuel oil) in another. Pour into a third vessel three parts rosin and one part petroleum. Keep warm and apply with a brush. It seals the wounds effectually until grown over. It does not run in warm weather nor crack in cold weather. Cuts covered with this preparation three years ago are in good condition today. It costs only about one-quarter as much as paint.

APPLES AND IRRIGATION.

Mr. Shepard, of Hood River, in speaking of the irrigation of the apple, recommends as little irrigation as possible, and deems once or twice each year as sufficient, as apples grown with excessive irrigation, as in the Yakima valley, would decay more rapidly than non-irrigated fruit. He cautioned growers not to irrigate late in the season, as this would keep the sap flowing and cause serious injury to the tree by the bursting of the bark. Moderate irrigation enhances the color of the apple. Potash is a good fertilizer and its use produces a better color, larger crop, better seed and longer keepers.

FRUIT TREE LAW.

California has at last a law, to punish dishonest salesmen of fruit trees. Under the law as amended last winter, it is provided that, "it shall be unlawful for any person, persons, firm or corporation, acting either as principal or agent, to sell to any person, persons, firm or corporation, any fruit tree or fruit trees representing same to be of a certain kind, variety and description and thereafter to deliver to such purchaser in filling such order and in completing such sale a fruit tree or fruit trees of a different kind, variety or description than the kind, variety or description of such fruit tree or fruit trees so ordered and sold. And any person violating any of the provisions of this act shall be deemed guilty of a misdemeanor and upon conviction shall be fined in a sum not less than fifty ($50.00) dollars, nor more than five hundred ($500.00) dollars, or by imprisonment in the county jail not less than 20 days or more than six months, or by both fine and imprisonment.

Prosecution under this act may be commenced at any time within seven years from the time of the delivery of such fruit tree or fruit trees mentioned in section 1, of the law which is quoted above."

POWERS OF BOARDS OF HORTICULTURE.

The state law representing the duties and powers of the county boards of horticulture, as amended reads: Section 1. Whenever a petition is presented to the board of supervisors of any county, and signed by twenty-five or more persons, each of whom is a resident freeholder and possessor of an orchard, stating that certain or all orchards, or nurseries, or trees of any variety are infested with scale insects of any kind injurious to fruit, fruit trees and vines, codling moth, or other insects that are destructive to trees, and praying that a commission be appointed by them, whose duty it shall be to supervise the destruction of said scale insects as herein provided, the board of supervisors shall, within twenty days there after appoint a board of horticultural commissioners, consisting of three members, who shall be qualified for the duties of horticultural-commissioner, and shall hold office for a term of two years. Upon the petition of twenty-five resident freeholders and possessors of orchards the board of supervisors may remove any of said commissioners for cause, after a hearing of the petition.

Section 2. This act shall take effect and be in force from and after its passage.

The provision of the law which it is asserted the supervisors of several counties of the State are disobeying, is that which refers to the appointment of incompetent persons as Commissioners.

THIN YOUR FRUIT.

The writer recently passed a plum tree in his own orchard which was literally breaking with its load of fruit. It was soon relieved of a vast quantity, and yet retains, doubtless, altogether too much. Other trees were found in the same condition, and a man put to work at thinning. It is now getting late for this work, and every fruit grower should see that the trees are relieved of the extra burden of producing a lot of worthless pits, when with proper thinning, luscious fruit may result.

Nature makes liberal plans, and allows a wide margin for possibilities of loss. She usually aims to have enough, and something to spare. Hence if weather conditions are all favorable, our fruit trees are often over-burdened. They are in the unfortunate condition of the man who has taken that which he cannot complete, and do good work without a loss. The tree has not vitality enough to perfect in size and quality its full load of fruit.

It is quite evident that the disk plow is to be part of the equipment of the progressive farmer of the future. The double disk, or gang, is the style in most demand, for the reason that a double disk will cut from twenty-four to twenty-six inches with the same horse-power that it takes to operate the sixteen-inch mold-board sulky, and the cost is but a few dollars more. The disk plow is to be a very conspicuous factor in the future trade of the implement dealer, for it must be remembered the disk drill, the disk harrow and the disk cultivator, which have become popular with the farmers and give evidence of remaining so, were a long time proving that they had come to stay.

The greatest work has always gone hand in hand with the most fervent moral purpose.—Sidney Lanier.

With the Citrus Growers

WHITE FLY IN FLORIDA.

PROF. W. A MORRILL of the department of Agriculture who is investigating the white fly, so destructive to citrus interests of Florida, recently read before the Southern States' Association of Commissioners of Agriculture at Jacksonville a paper from which we quote sufficient to convince Californians that the last thing wanted in California is the white fly.

"The control of the white fly is a problem limited to the orange growing sections of the Gulf States. Its history as a pest covers a period of less than twenty years, but in its importance as a menace to citrus fruit-growing interests in Florida the white fly has already surpassed all other citrus enemies, both insect and fungus. Its spread into new territory is annually becoming more marked being hastened by the constant appearance of new centers of infestation. At the present rate, every grove in Florida will become infested during the next ten years with the possible exception of a few that may be favorably isolated. The work that is at present being conducted by the Bureau of Entomology of the United States Department of Agriculture was begun soon after the first of last July under the provisions of the Congressional Agricultural Appropriation bill for the present fiscal year. To those of you who have a general knowledge of the scope of entomological investigation it is unnecessary to explain that three months' work is insufficient in point of time for conclusive results in any but minor particulars.

What the Citrus Fly is.

The adult white fly is a minute insect about one-twentieth of an inch in length. The green-house white fly and the strawberry white fly of regions farther north, are its only near relatives which are of much economic importance in this country. The eggs are deposited on leaves of food plants and the larval stages appear much like certain soft bodied scale insects. At certain seasons of the year the adults appear on the wing in enormous numbers even to the point of resulting in considerable personal discomfort to the inhabitants of many of the towns of the state. It is but fair to state, however, that the chinaberry trees and not the citrus trees are mostly responsible for these large swarms of migrating adults.

Nature and Extent of Injury.

The citrus trees are seldom if ever killed outright by the attacks of these insects, but growth is retarded to a marked degree and sometimes entirely stopped. Injury is not only due to the extraction of the juices of the leaves by larvae and adults, but by the black fungous growth known as sooty mould which grows rapidly upon honey dew secreted by the insects. A simple chemical test shows that the soot covered leaves are unable to properly perform their functions of building up starch out of the food elements supplied by the roots. The fruit of infested trees is reduced in quantity, fails to ripen normally, and is of inferior quality and size. The size of the fruit is reduced from one to two sizes, according to usual estimates. On the basis of reduction of one size the decrease in yield amounts to twelve per cent. The decrease in actual number of fruit produced by infested trees would be conservatively estimated at twenty per cent. Moreover the fruit usually requires washing to remove soot before shipment, which is not only an expense but injures the keeping quality.

Prof. H. J. Webber of the United States Department of Agriculture estimated in 1895 that the loss occasioned by this insect was in the neighborhood of fifty thousand dollars per year. Since that time the pest has become more widely spread and destructive. Professor H. A. Cossard, formerly entomologist at the State Experiment Station, in his valuable bulletin on the white fly, stated it to be his belief that the decrease in yield caused by the insect was between twenty-five and forty per cent. and in 1903 the same writer placed the loss at a quarter of a million dollars per year. At present it is safe to estimate that the white fly has become established in one-eighth of the groves of the state, and if the entire loss in size, quantity and shipping quality of the fruit were but thirty-three per cent. in these infested groves it would equal fully three hundred thousand dollars per year, at the present rate of production.

Method of Control.

The success of all methods of control against the white fly is to a great extent dependent upon concerted action among all the citrus fruit growers in a particular locality. At the present time spraying is the only control measure which is practiced against the white fly. In some sections of the state, this has come into disfavor for various reasons. Among the greatest causes of inefficiency are poor methods of application and lack of thoroughness on the part of men engaged in the work. There is an opportunity for a large amount of work to be done in the line of determining comparative effeetiveness and cost of different materials used in spraying, as well as the maximum dilution possible in each case without diminishing the efficiency. Several instances have come to my attention where spraying has given entire satisfaction under circumstances wherein the results were not interfered with by the presence of adjoining groves left untreated, or by the presence of chinaberry trees. The trees mentioned are favorite breeding places for the white fly, and each tree is capable of producing many millions of adults, which by their habits of migrating in midsummer may nullify to a great extent the most careful spraying of neighboring groves. The importance of these factors should not be overlooked in estimating the benefits derived from the use of sprays.

Expense.

The expense involved in spraying is an important consideration, but the total cost of spraying a grove when regarded as a lump sum frequently seems more excessive than when the cost per tree is calculated. Until the advisability of some other method of treatment has been conclusively proven, spraying must be relied upon in most sections of the state to prevent the devitalization of the citrus trees by the white fly.

Fumigation with Hydrocyanic Acid Gas after the methods in common use in citrus groves in California was tried in this state a few years ago by the Experiment Station entomologist. The results showed the desirability of this practice being tested by the orange growers of Florida on a larger scale than was possible in these preliminary experiments. That this has not been done seems due principaly to the lack of demonstration of the methods involved. Plans are being made to continue experiments along this line during the dormant season of the citrus trees. It is hoped that in its value as experimental work and as a demonstration of the fumigation methods this will have a two-fold result.

Natural Enemies.

Three fungus diseases which destroy the lavae of the white fly are proving very beneficial in certain sections of the state. In Manatee county, where the two best known of these fungi have been longest established side by side, the experiences of the citrus fruit grower show that in a series of six years the relief by these diseases has amounted to about one-third of a complete remedy. This year these parasitic fungi have resulted in producing two-thirds of a condition of complete relief. This is owing, with little doubt, to atmospheric conditions being usually favorable to the growth of such forms of plant life.

It remains to be proven whether by artificial means these fungi can be disseminated and relied upon to give a satisfactory condition of relief from view of this season's experiences showing the degree of effectiveness these fungi may sometimes attain in inland localities, notably at Orlando, it is most strongly advised that each of the three parasitic fungi be established in every white fly infested grove in the state.

Thus far predatory insects, although not uncommon, have proven of but little benefit in reducing the number of the white fly. True parasites are at present unknown for these species, although of the seventy odd species of white fly known to occur in this county but twelve are subject to the attack of minute wasp-like parasites. These parasites in some cases are very effective in controlling the host species. In one case it has been calculated that over sixty per cent. of a certain species of white fly had been destroyed by this means. The success attained in recent years in allowing insects to fight insects leads to the hope that eventually some parasite will be found which will aid naturally in the control of the citrus white fly. As far as means for such work permit, efforts are being made to import into the state and to establish such parasitic insects and fungi as are known to attack species of the white fly, in other sections of this country and in foreign countries.

On the one hand the exposed condition of the pest under consideration rendering it specialy valuable to the attack of natural enemies and on the other hand the inevitable labor and expense of successful artificial methods gives basis to the prediction that complete control by natural enemies will be the eventual conclusion of the white fly problem.

A PLOWING HINT.

Did you know that trash ploughed under while wet will rot much quicker than if ploughed under while dry, no matter how much rain falls on it after being ploughed in? If you don't know it, then just watch it in the future. I have noticed it several times.

One year I began ploughing early in the fall, and the ground was very dry. I ploughed several days and decided to stop until it rained, when it would be easier on the team. It was two months before I began plowing again. When I began the second time the ground was wet, and all the trash was then well soaked. I ploughed it all under just as I did before, breaking the same depth, etc. When I examined the land early next spring I found that the trash I had turned under while dry, the first strip ploughed, was almost like it was when I ploughed it under, having rotted very little. While that ploughed under later but while wet, was entirely rotted.—Ex.

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Are fully described in our treatise of Citrus Culture, which is a trifle the best thing of its kind ever published. Contains about 50,000 words and 100 illustrations telling about oranges and lemons from the seed bed to the bearing orchard. Price 25 cents. Remember we are the largest producers of Citrus Trees in the world and stand ready to serve you with the finest nursery stock that can be grown. Correspondence invited.

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One and Two-year Buds, Clean, Healthy, Vigorous Stock.
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Pollard Brothers Alhambra, California

California Cultivator

ESTABLISHED 1889.

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THE COYOTE NUISANCE.

Frequently letters of inquiry come to the Cultivator in reference to the coyote plague, especially in sparsely settled communities where depredations are large. These pests which destroy chickens, young pigs, lambs and even attack calves sometimes, do a great deal of damage in California annually.

How to dispose of these enemies of the ranch which continuously annoy the farmer and deplete his young stock, is treated in a recent bulletin on "Wolves in Our Forests," by the Forest Service Bureau of Washington. Of course, we do not have the big timber wolf in California, at least the gray wolf, of the middle-west country, but the coyote is near enough related to be much like it, and is also most damaging in its nocturnal assaults on the class of stock above referred to.

We quote the bulletin:

"In the use of poison it is of first importance to determine the amount that will kill with certainty in the shortest possible time. According to German and French authorities on toxicology, the smallest dose of strychnine that will kill a 25-pound dog is approximately one-half of a grain. Quadruple this for a 100-pound wolf and we have two grains. Mr. B. R. Ross, of the Hudson Bay Company, found that this quantity would kill a wolf quickly. Experiments by Prof. David E. Lantz, of the Biological Survey, would indicate the best results from a still larger dose. One grain killed a 21-pound dog in seventy-five minutes, while two grains killed a 40-pound dog in twenty-seven minutes, without acting as an emetic. For a wolf, therefore, four grains of pure sulphate of strychnine would seem to be a proper dose.

For wolves, place four grains of pulverized sulphate of strychnine in a 3-grain gelatin capsule, cap securely, and wipe off every trace of the bitter drug. The capsules should be inserted in a piece of beef suet the size of a walnut, and the cavity securely closed to keep out moisture. The juice of fresh meat will dissolve the gelatin capsule, hence only fat should be used. The necessary number of these poisoned baits may be prepared and carried in a tin can or pail, but they should not be touched with naked hands. Old gloves or forceps should be used to handle them. The baits may be dropped from horseback along a scented drag line made by dragging an old bone or piece of hide, or may be placed on, around, or partly under any carcass on which the wolves are feeding, or along trails followed by wolves. Partial concealment of the bait usually lessens the wolf's suspicion, while some kind of scent bag near by or along the trail insures its attention.

The gelatin capsule will dissolve in about a minute in the juices of the mouth or stomach. When the strychnine is taken on an empty stomach it will sometimes kill in a very few minutes, but when taken on a full stomach the wolf may have time to travel some distance before dying. In experiments on dogs the animal usually becomes helpless in one or two minutes after the first symptoms of poison, and dies five or six minutes later."

CAR SHORTAGE.

Shippers throughout the country are to be congratulated that there is now harmonious action between the common interests of consumers and railway operators. These several classes which have, in the past, worked at variance, are now operating in unison and the promise is auspacious that in the future the car shortage situation will be remedied.

"The American Railway Association, which held its sessions in Chicago, recently, adopted a rule providing that any railroad that does not promptly return a freight car belonging to another line must pay a five-dollar penalty. This fine is to be in addition to a daily charge or fifty cents, which every company will pay for each car on its lines after July 1."

In addition to this arrangement, the car clearing house system recently established in Chicago has arranged a publicity program to assist in the tracing of these vagabond freight cars.

The railway companies are realizing that they, as well as the shippers, are losing money through inefficient traffic management. This combination of self-interest will also benefit the people. Coming in the same week with the Mississippi decision that railways must pay demurrage charges to consumers and shippers for unreasonable delays in the movement of freight, the railway action of Chicago indicates that the persistent preaching of newspapers and the memorials of shippers have been having a beneficial effect.

The president preaching of the newspapers of the country against the dilatory tactics of the common carriers, have had the effect of calling the attention of the courts to the delays and consequent loss to both shippers and consumers by the embargo of the railroads against the producers.

California has sustained a serious loss by reason of the railroad situation, but there is every prospect that the future will be relieved of this condition and that our products will be sent to market without the delay which has heretofore attended the varied industries of California.

FARM MISSIONARIES.

In the state of Washington the University is considering a plan of employing traveling lecturers to go from farm to farm to consult with and advise the owners regarding the best methods of producing and marketing crops.

This idea is endorsed by many prominent experiment station directors who believe the plan of carrying information to the people who are busily engaged in pursuing their occupation is a good one and means much for the advancement of the calling in which they are engaged.

In California, we have the horticultural commissioner system which takes the place of traveling lecturers proposed for Washington, and when these commissioners are experts, like J. W. Jeffrey and S. A. Pease, they can be of inestimable service to the horticulturalists of the district in which they operate.

In general we like the idea of sending missionary lecturers to the agricultural districts. The Spokesman Review well expresses the thought when it says:

"The missionary idea of carrying the gospel to every creature is not confined in its usefulness to religious work. In all departments of life it is seen that the beginnings of instruction must be forced upon the people to a certain extent. That is to say, their interest must be aroused from a source not of themselves. Invitations to attend meetings and hear valuable lectures are neglected largely by those whom it would most benefit.

"Instances are not lacking of this idea of farm missionary work. "Corn trains" have been fitted up in the central west and hauled by the railroads from town to town educating the farmers how best to breed and raise corn. There is a record of a "poultry train" doing the same kind of work. A movement is already on foot to put on a "wheat train" to teach the farmers of the Inland Empire how to make the most profits in raising grain. These trains are accompanied by instructors who go from place to place, carrying information and giving instructions to those who otherwise will go on "in the same old way," while their more progressive neighbors are extracting money from farming. Creamery men also have found much to do in this sort of missionary work. Tneir wide-awake agents are constantly preaching what are the best kind of cows to keep, the best method of feeding and how to profitably care for and ship milk. So it is all along the line."

The new agriculture demands much in the line of missionary work.

SCHOOL GARDENS.

One of the pleasant signs of progression in our public school system is the establishment of the school garden. In several eastern cities the experiment is being tried and the consensus of opinion on the part of trustees and teachers is that pupils are interested, educated and elevated by the influences of the flower garden. It is found that the little children seven to nine years of age acquire more general knowledge of value in doing things than they could get from sloyd work, manual training, or book study alone. We expect in a few years to see an hour's garden work each day given to every child in the primary grades in all schools.

As a general proposition, the garden is not alone for the beautiful flowers and fresh vegetables conveniently at hand for every summer day, but for the pleasure of producing this supply out of one's own soil and watching its daily growth and development. The vegetable garden hardly less than the flower garden, and flowering shrubs typifies the ever advancing seasons whose changes make up the never failing charm and pleasure of out door life.

NO REACTION.

Fears are expressed by some well advised citizens that the advanced ground taken by President Roosevelt and his supporters will be lost if he is not returned to the presidency in 1907.

There is no ground for any such fear. Every adminstration has been progressive; has been ahead of every other administration.

American history does not describe or make known any reactionary period. No good American statute once enacted has ever been repealed. None ever will be. There is not a particle of danger that anything done by the last congress will ever be modified. Certainly no danger that it will ever be repealed. The president who succeeds Mr Roosevelt must be progressive. He must go ahead along just lines, always acting in fairness, but preserving the rights of all American citizens.

At this season (we mean now) it is the part of wisdom to spray for the codling moth and thus prevent wormy apples. Paris green is the best remedy and should be applied at least twice during the season. The first time soon after the blossoms drop and before the fruit turns downward. One pound of Paris green to 180 gallons of cold water. Make the poison into a paste before mixing with the water and while spraying should be kept constantly stirred. It should be applied again about sixteen days after the first application, and in some districts a third application is beneficial or less with soft varieties.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

Grain is already being warehoused in Coachella.

Anaheim is also in line with the good roads movement.

Hogs are being fattened in the grain fields of Imperial Valley.

The harvest season is in full swing in the Coachella and Imperial Valleys.

A movement is on foot to build a boulevard connecting Yucaipe Valley with Redlands.

Over forty million gallons of water are flowing daily over the top of the great Hemet dam.

Perris is moving for better roads; especially one main throughfore leading into Riverside.

The City of Santa Ana contemplates buying a farm of 133 acres for the disposal of the city's sewage.

The Riverside Commissioners have made an appropriation for fighting forest fires in the reservations.

The Imperial Development Co. is constructing an immense flume to carry irrigation water cross the New river gorge.

Water Company No. 1 of the Imperial District is experimenting with a twenty-five horse power engine in cleaning ditches.

It is estimated the Imperial valley returns for products to be distributed in the immediate future will aggregate $3,000,000.00.

New threshing machines are being brought into the Santa Ana section for working in the exceptionally large grain crop this year.

Some of the outside districts of Los Angeles County are moving for three million dollar bond issue in the interest of good roads.

Orange county celery growers claim that the Southern Pacific owes them thousands of dollars because of the failure to move the crop.

Redlands is taking steps to effect the settlement of the Yucaipe valley where 14,000 acres of fertile land will be opened for settlement.

The City Council of Santa Monica has passed an anti-weed law, compelling the removal of weeds from lots as well as along street lines.

Los Angeles milk inspectors have given many dairies of Southern California a thorough inspection and demanded thorough clean-ups.

Summer squash is being shipped from Brawley. It is estimated that at least a car load will be the output from that one point this season.

The Salton is reported to be holding its own and not showing much fall from evaporation as yet. There is yet some flow of the river into the lake.

Holtville, Imperial valley, claims to be first in the market with a new crop of barley which was delivered to the Imperial Grain and Milling Co. there last week.

A large reservation consisting of about 2000 acres of farming land in San Luis Rey country is soon to be alloted among the Indians of the Pala Reservation.

The Imperial Creamery is now turning out a large quantity of butter; one day last week seeing 2200 pounds churned. The output for this month will exceed 20 tons.

Los Angeles and San Bernardino counties are moving for better forest protection in the forest reserves. Last year both counties suffered severely from destructive fires.

Dealing in agricultural lands about the Imperial valley is much more rapid since the feeling of security has come in the control of the waste water of the Colorado river.

A Santa Ana grower claims to kill army worms by feeding them ordinary bran with no poison, claiming that its power of swelling up, "all samee" dried apples, fixes the worm.

The ranchers of Santa Ana are contending with the owners of the Irvine Water Company regarding water rights which the big water company is endeavoring to deprive the ranchers of.

HORTICULTURE.

Thermal is taking steps to have a "Melon Day."

There will be good crop of pears at Hemet this season.

Highlands has shipped 1300 cars of citrus fruits up to this time.

Riverside has shipped nearly 4000 cars of oranges up to this time.

Black sage is in full bloom and bees are busily storing a good yield.

Riverside reports the army worm climbing trees and eating oranges.

Brawley fruit growers are constructing a large storage and shipping warehouse.

Over 5000 trees were fumigated in Riverside County for red scale last month.

Walnut trees are looking fine in the Hemet Tract and they have set a good crop this year.

The first crate of cucumbers out of Imperial district was shipped May 4, from Brawley.

Rialto Improvement Circle is moving for better roads and otherwise inspiring tidier places.

Coachella Valley is moving for one large shipping association to handle its output of fruits.

San Bernardino County has two power sprayers working against the powdery mildew on apple trees.

The Submarine claims that more than a thousand acres of the Coachella valley are planted to melons and grapes.

The Whittier News reports interest in the walnut industry as increasing more this year than at any time in the past.

Strawberries have been a glut on the market for the last few days, the Southern California crop being the largest ever.

Riverside Horticulture Commissioners report a month's active work for April, special attention having given to red scale eradication.

Rialto Orange Co. has contracted with the Rialto Citrus Union for packing the remainder of its crop which will be about 125 cars.

Bee Inspector Pleasants, of Santa Ana, reports the present as good working weather with the probability of a big crop of honey this season.

Cantaloupe growers in Coachella and Imperial Valleys are busy these days; vines full of bloom with a few melons already a third to a half grown.

Prof. A. E. Fry, one of the most prominent educators of the country is experimenting with the growth of pine-apples in Highlands.

The Southern California Fruit Exchange is making a strong move to secure more cars for moving the remainder of its citrus crop.

Two packing houses belonging to the California Citrus Union and the Rialto Orange Co. were burned last week with a loss of $25,000.

Whittier is having serious difficulty with the appearance of large numbers of army worms; in some instances even the larger fruit trees are attacked.

The advantage of the Rialto section as an orange producing community is becoming more recognized. Several large sales having been made by Riverside capitalists during the last two weeks.

E. E. Allen, of San Diego, is experimenting at Santa Ana in a remedy for walnut blight, wishing to pull down the $20,000 prize offered by the Walnut Growers' Association of Southern California.

The poultry business is developing into quite an industry at Hemet. There are several good sized chicken ranches located on the Hemet Tract. About fifty cases of eggs are shipped from this point weekly.

La Habra Walnut Growers' Association filed articles of incorporation with the county clerk last week. Capital stock $25,000. To grow, buy, sell, deal in, bleach, and treat walnuts is the mission of the Association.

Northern California

AGRICULTURE.

Tehama is making a move for better roads.

About 125 cases of eggs are shipped from Corning weekly.

Dinuba reports 15.91 inches rainfall as against 14.80 last year.

Anderson ships broom-handles to San Francisco by the carload.

S. H. Rambo has been appointed fire warden for Santa Cruz county.

Watsonville reports promise of fine prices for apples for the coming season.

San Jose Grange is advocating a "Peace Day" movement in the public schools.

Ukiah will soon have a new creamery; over two hundred cows having been pledged.

Lakeside country, in the San Joaquin Valley, reports extensive plantings of alfalfa.

State Forester Lull is giving special attention to safeguarding against summer forest fires.

San Francisco buyers are after the "spud" crop of Pajaro Valley; attractive prices are being made.

Wheat growers, of the great central valley, look with complacency on the soaring price of wheat.

The creamery on the Burdell ranch, two miles from Point Reyes, was destroyed by fire last week.

Kern, Fresno, Tulare and Tuolumne counties are taking steps to protect the forest reservations from fire.

The break in the levee at the Hoch farm, near Yuba City, has been closed by the pile-drivers within the last few weeks.

Nevada City complains that its road club is losing interest and enthusiasm in the good roads movement which was started some months ago.

Good progress is being made in the erection of buildings at the State Agricultural Farm, at Davisville; twenty men are employed at this time.

Sonoma County Driving Club is planning for races on June 1st. Automobile races will be admitted at the meeting of the Sonoma Driving Club at Santa Rosa.

Upper Lake Cheese and Dairy Company, of Lakeport, recently elected the following directors: Sam Jones, Jas. Mason, W. O. Ruddick, Geo. Ritney and W. E. York.

Corning reports the receipt of 60 tons of wool at its railroad depot in one week. This wool was raised around Henleyville, Paskenta, and other foot-hill towns.

The cattle quarantine has been removed from the southern and eastern parts of Fresno county, and cattle in these sections may now be shipped to any section of the State.

Sacramento is planning for a cordial reception to the National Irrigation Congress to be held there later; steps have been taken for the raising of $50,000 for the entertainment of the delegates.

A river meeting is called for Sacramento on the 21st of this month to discuss methods of improving levees, and otherwise controlling the damage from winter floods. Governor Gillett and Senators Perkins and Flint will be speakers.

The sheep men of the state held a meeting in Sacramento last week, and requested of the Governor the appointment of a commission to enforce the sheep inspection law pased by the last legislature. The committee agrees to furnish the funds necessary for the enforcement of the law.

Regarding the field crops about Yuba city, a correspondent says: There will be a heavy hay crop in Sutter county this season. Much of the acreage that was sown to grain and that was overflowed will be cut for hay. The excessive rains and water of the winter has turned much of the wheat into what is called "cheat," which makes fine hay, but which is of no use for seed purposes. On the ridges the growth of hay is particularly heavy.

HORTICULTURE.

Corning is reporting shipments of strawberries.

Grapes in Kings County will average about three-fourths of a crop.

Yuba City reports an immense grape crop; in fact, the heaviest on record.

Hanford reports an average crop of peaches in the country surrounding and prunes and apricots exceedingly light.

The strike situation in San Francisco is interfering with the best market results on small fruits.

A large amount of planting in Kings Country is reported: over a hundred thousand fruit trees with over half a million grape-cuttings are among the items reported.

The prune, peach, apricot, and cherry crops are bearing exceedingly light in the Santa Clara Valley. Col. Hersey estimating one-fourth or two-fifths of last year's crop.

The first shipment of cherries of this season was gathered in Vacaville and forwarded from Sacramento May 6th. The first of last year's crop was forwarded May 2.

A correspondent from Yuba City says that vineyards are in excellent condition and that the winters rains have been of vast benefit with fruit and farming interests.

Prof. Hunt, of the State Agricultural Department, is experimenting with the Bordeaux mixture for the treatment of pear blight and shot-hole fungus in the Hanford fruit district.

Northern California lumber men are experimenting, with assistance from the National Department of Agriculture, in the planting of eucalypts on cut-over lands in the redwood belt.

The stockholders of the Santa Clara Valley Fruit Growers Exchange have elected the following directors: Philo Hersey, C. F. Wyman, C. P. Bailey, H. A. DeLacey, D. Johnson, W. M. Herrold, J. T. Grant, F. H. Babb, and E. L. LeQuesne.

W. C. Walker, Pacific coast manager of the California Fruit Exchange, was in town yesterday. Mr. Walker has heretofore served the company in the Chicago district, but upon the resignation of Mr. Sprague as manager, he was chosen to succeed him.—Vacaville Reporter.

The supervisors yesterday granted the California Fruit Canner's Association the right to construct a spur track at Kingsburg to six acres of land recently purchased by the association. Application for right to build the track was made by J. M. Heron as manager of the Fresno branch of the canners' association.—Fresno Republican.

The Happy Valley strawberry, the Olinda strawberry, the best strawberry grown in the state of California, the strawberry that has made Shasta a prominent county for the luscious fruit, is now coming into market in quantity. Many crates are loaded into the express car on the Portland Overland train every morning for the Oregon market.—Sacramento Union.

The writer recently had the pleasure of a visit to the yards of Mr. W. A. Seymour, breeder of White Wyandottes. In his yards were same excellent birds, being the true Wyandotte type.

Mr. Seymour recently bought the entrie flock of White Wyandottes, of the Unique Poultry Farm; those birds with his own gives him not only a good flock, but a large one, but his yards are conveniently arranged and every order for eggs or stock will have Mr. Seymour's personal attention.

W. W. Howard, of San Jacinto, formerly of Los Angeles, well-known on the Pacific Coast as the originator and breeder of the Howard Strain of White Leghorns, is breeding this strain on a larger scale than before. Mr. Howard has a large trade on this breed, not only on the Pacific Coast but in all parts of the United States, and recently shipped a fine trio to Japan.

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

Buy the World's Famous Egg Food No. 4

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IF YOU WANT EGGS
YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Haphazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultry men who have used these machines have supreme confidence in their ability to hatch and breed. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for the greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. Filcher, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

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Capt. E. Pryce Mitchell
Mitchell's White Leghorns Exclusively
Carl C. Curtis, Owner
Lincoln Ave. and Ventura St., Pasadena, Cal.
Circular for the Asking (Altadena Cars)

200-250 Egg Fowls | **WHITE WYANDOTTES** | Always Win

Eggs and Stock Half Price for May
36-Page Catalog Free
CAPITOL AVENUE POULTRY FARM
A. L. R. MANTZ Rural 21, Box 98k SAN JOSE, CAL.

Chicks Just Hatched We ship them everywhere. Pure Bred White Leghorn Chicks from the Best Egg Producers in the United States

California Incubator Co., Maxwell, May 27, 1906.
Gentlemen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come so far and being so long on the way without the loss of a single one, but it is an undisputed fact that such was the case. We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. Campbell.
CALIFORNIA INCUBATOR CO., 907 Washington St., Petaluma, Cal.

8 Varieties of Wyandottes
Each Bred on Separate Farms. Quality Best. Eggs and Stock guaranteed. For particulars write for catalogue.
Queen Poultry Co. Box 2, Los Angeles, Cal.

The White Faced Black Spanish
Are famous as layers of large white eggs at all seasons of the year. We won all prizes at the Breeders Great Show, 1907. Choice Cockerels For Sale, $5. Eggs, $1.50 per 13, $4 50 per 50, $8 per 100. Special matings, $3 per 13. Fertility guaranteed.
Mrs. W. H. O'Connor Lock Box 112, Dolgeville, Cal.

Black Minorcas Exclusively
Our Minorcas excel in size and egg production. All prizes at the late Los Angeles Show were awarded our birds. Stock and eggs for sale. Send for our new illustrated catalogue.
Perham & Wheeler, R. F. D. No. 123, Lordsburg, Cal.

Profit in the Poultry Yard

By FRANK H. THOMAS, Los Angeles, California

MR. THOMAS IN CHARGE.

READERS of the Cultivator have had the pleasure of an occasional article by Mr. Frank H. Thomas. It is with much pleasure that we now announce that he is to be a regular contributor and will have charge of this department in the Cultivator. He will furnish the leading article each week and be prepared to answer all questions on poultry culture.

His connection with the paper is such that he has a desk in the editorial rooms and is prepared to give immediate attention to any poultry matters submitted to him.

Mr. Thomas has had many years experience in poultry matters, beginning his work with thoroughbreds in Jacksonville, Illinois. From there he took many prize-winning birds to shows from Kansas City to Madison Square. Incidentally, at Jacksonville, Mr. Thomas engaged in the printing business, for which he had a large and successful plant.

Since coming to California, he has been identified with the poultry industry and has done some of the most intelligent and impartial judging and awarding of premiums ever given to California breeders, in the last two Los Angeles shows.

Thus he knows good birds, he knows how to raise prize-winners and producers of wealth from a commercial standpoint. For these reasons he is fitted to make this department of greater value to our readers than ever before. It's up to the readers to improve the opportunity and draw liberally on Mr. Thomas' abilities. If he doesn't give in the department what the subscribers want, ask for it.—Editor Cultivator.

THE RED MITE.

AT this season, we have to keep a close lookout for the most deadly foe to our flocks, the little mite.

The mite is the smallest of our pests, yet what they lack in size, they make up in numbers, and the rapidity with which they multiply will astonish any one. We have been told that a mite hatched today will be a great grandmother tomorrow. That we cannot say positively, for we have never become well enough acquainted with them to distinguish one from another. Without doubt, the numbers in an infested poultry house will run into millions. A single mite can do no narm, but thousands can. They seem to appear all at once; we have seen setting hens driven from the nest by them. We remember having bought a setting of fine eggs and putting them under a hen. After carefully dusting her, we put her in a clean nest with clean straw, and watched her every day during the period of incubation. When the eggs hatched, we left them in the nest over night, expecting to take them off the following morning, but when we went to get the chicks we found them dead and the hen gone. We succeeded in finding the hen; her comb was as pale as if she had been sick for a month and she could hardly walk from weakness. The mites had sucked nearly all of her blood.

The mites, when they first hatch and before they feast on a fowl, are grayish in color, but after they fill up on blood, this shows through the transparent skin; then we have what is called "the little red mite." In their natural color, you can hardly notice them on the roosts nor in the nest boxes.

We have had hens leave the nest, but on examining them could find no trace of either mite or disease. The mites that had been sucking their blood had all left and gone into the straw and would appear again the next night for another feast.

Besides the damage done by breaking up your hens from setting, some who claim to know, say that they will spread disease by feasting on a sick fowl and then on a well one, and in this way the whole flock becomes contaminated.

Since all are apt to be bothered with this pest, it is well to be prepared for them and know the best means to rid our houses of them. Since they have no lungs, as the large body-lice, or feather-lice, it is useless to use either a liquid lice-killer, or a dust on them, as the liquid will only kill what it comes in contact with, and the dust will only drive them off for a short time.

The best remedy we ever found is paint; as long as you keep your house painted, there are no cracks in which these pests can lay their eggs, and as they are very short-lived, you can soon get rid of them in this way. Another good way is to white-wash, but it is not the best plan to put too much white-wash on the roosts. Another good way is to spray about once a week with a kerosene emulsion; if this is done, you will have no trouble.

LITTLE CHICKS.

The chicks should not be hurried from the incubator to the brooder. They do not need food. They do need rest. The incubator is better for a day longer than is the brooder.

The brooder must be light on roof and sides, dry and clean. There must be no lice or red mites waiting for a chance to multiply. The floor should be wind and rat proof. The window arrangement of the brooder house is less important. The brooder should be placed where the sun of noonday will not rest on it. The morning or afternoon sun will do all the good needed and not over-heat the brooder when least desired.

It should have at least two warm compartments, one that can be heated to ninety degrees and serve for a sleeping room, the other to be warmed to over sixty degrees of temperature and be used for a retiring place from the cold of the brooder house. If the "mother" that hovers the hot room is round and has a border of woolen fringe, it is so much the better. The opening and airing of the brooder during the sunny hours of the day will be conducive to good health.

The time to start the heat in the brooder is when the chicks begin to hatch in the incubator. The whole brooder needs to be warmed. Plan to run the brooder lamp at least two days before putting in any chicks, then there will be less danger of the heat running down the first night and the chicks piling up and taking cold. The lamps should not be so placed as to get over-heated.

If there is a water tank on lamp, keep it filled. The better the oil used the less crusting of the wick and the less danger of over-heating the brooder. Fill the lamp when you please, but trim the wick toward night, so that the last visit of the day will show you that the light is likely to go through the night safely. Make sure that the ventilating holes are uncovered, so that the circulation of pure, warm air is not obstructed. The best chicks are never raised in air that is breathed and rebreathed.

The chicks are now thirty to forty hours old and can be moved from the incubator to the brooder. They are crowding to the glass of the incubator and picking at it. The brooder has been warming up for two days; the thermometer in the "mother" indicates ninety-five degrees. Cover the bottom of a basket with warm chaff or cloth and have a woolen cloth cover to put over the chicks when carrying them. Open the door of the machine, remove the chicks quickly, cover and take to the brooder house. Put the chicks inside the "mother" and close the brooder. Do not put over fifty chicks into any single brooder made. This is all that will do well in a flock.

Newly hatched chicks should not be fed for thirty-six hours (or more) after leaving the shell. For their first feed nothing is better or safer than chaff from the barn. In this are seeds and leaves that require some effort to find. Feed very little at a time and every two hours the days of the first two weeks, then increase the length of time to three hours. Water should be kept before the chicks at all times, also a dish of chicken grit. When the chicks are three days old begin to feed a baked mash. This is made by mixing three parts corn meal, three of bran, one of meat meal (all

by measure) with hot water or milk and bake in a slow oven for two hours. This "cake" is crumbled and fed in the litter of the brooder. Alternate the feeding of cake with dry grain.

The first feed of the day may be cake, the next cracked wheat, then cake, then hulled oats, then cake, then cracked corn, etc. Vary the feeds from day to day. Always keep the birds slightly hungry. Green food adds to the health and growth of brooder chicks. This can be carrot tops, lettuce, cut cabbages, steamed cut clover or cut onions. Clover meal in the mash will give green food in a convenient form. An occasional feed of finely cut green bone will be good after the second week, but must be offset by reducing the meat meal in the mash. The early weeks of a chick's life should be used in making size and frame, rather than weight. Feed well, but do not over-feed. Just as soon as the chick learns to scratch give all dry grain in the litter of the floor. This gives the necessary exercise and helps along the appetite and digestion. The active chick is seldom sick and does not show signs of leg weakness.

When the chicks are a week old they can be let out onto the house floor to eat their mash, but see to it that they know their way back to the brooder. Do not let these early chicks go outside the house. Open the window and door to admit fresh air on pleasant days. After the first few days let the brooder thermometer alone. Watch the chicks rather than the temperature. When the heat is right you will find the chicks at the fringe of the "mother." If they are much inside of it the heat is not enough. If they lay outside of the hover, you are running the lamp too high.

Until five weeks old there is little change in diet. The chicks are to be fed little and often. There should be variety in the articles of food from day to day. Once a week the chicks will appreciate a feed of raw meat. A little waste from the table of muffins or corn bread will make the chicks happy. Dry feed will eliminate much of the diarrhoea. Keeping clean the brooder and supplying fresh air to the mothered chicks will lessen the number of colds, whether of the nostrils or bowels. Lice must be kept under or the profits will be very small. Old houses or brooders that have ever been inhabited by red mites must be absolutely free of them before putting in a chick. —Commercial Poultry.

HENS THAT PAY.

Hens may be divided into three classes: Those that are not worth their keep; those that produce enough to cover the cost of handling, and those that more than meet the expense of money and time necessary to make them worth while. Of the three classes the last is the one that we all desire and the one that we can have if we are willing to pay the cost.

What is necessary to secure birds that pay? It takes more than money to do it. You may be able to buy profitable birds, it is another thing to make them profitable after they have been purchased. Not only must you have the right kind of hen, but you must use time and thought in caring for her to make her of the "paying kind."

The paying hen is usually hatched from a paying strain. The paying hen that comes out of a flock of good-for-nothing birds is seldom met and is not worth hunting for. To find good hens in poor flocks takes time, and time means money; it takes born hen sense to produce a flock of paying hens. It takes a very little neglect to send a good flock to the class of non-paying birds.

Paying birds are a delight. You like to show them to your friends; you like to linger in your description of what they are and what they have done for you. This class of birds, because they pay, receive thought and attention from you. You gladly take care of them; you are willing to properly mate and feed them; and you look for fresh blood to improve them.

Paying birds never make up a large part of your flock when you sell the cream of the chicks every year. Money-making flocks are made up of the best you raise—always letting the second quality go to market.

Paying birds live in houses free from vermin; they are usually supplied with pure air and water. They get feed that is needed to bring the profit to the proper point. Cheap feed, because it is cheap, never helped to produce the paying hen or kept her running to the nest.

Hens that pay can be yours if you are willing to do your part. Hens that more than pay, those that yield splendid profit, are what the world is asking for, is looking for, is demanding. Are you to be among the breeders who will fill the orders for this kind of birds?

It also pays to breed fancy birds. No one need fear that the breeding of that class of birds will be overdone. The "short term" fancier and the demand for good birds by those starting in the business will keep up an active demand for high-class stock for many years to come.

The small per cent. of really high-class exhibition birds from the average mating will also help keep the market alive. From five to ten per cent. of the best matings produce top birds. Fifty per cent. of any variety or breed should be sold for table use or kept for market eggs. Line breeding, a closer following of pedigrees and severe selection will improve these averages in any breder's yards.

The breeding of fancy birds present as much of an opening today as the breeding of any other class of pure-bred stock. It can be entered more cheaply, and for the man of real ability as a student of breeding, the returns will come sooner than in any other field. Hard work with the hands and good work with the head will put the breeder to the front early. There are many men who are putting the best they have in themselves into the business of poultry breeding, and they are making names for honesty and success. Stand up for fancy breeding and the business in general. There is room at the top and applied manhood can get there. The breeding of fancy poultry is a recognized calling, and many glory in it.—Farmers' Tribune.

FOR FRESH EGGS.

This is the season when fresh eggs should be plentiful. If you have hens that are not laying, well, the fault must be yours. Hens that are not well cared for will not produce eggs abundantly.

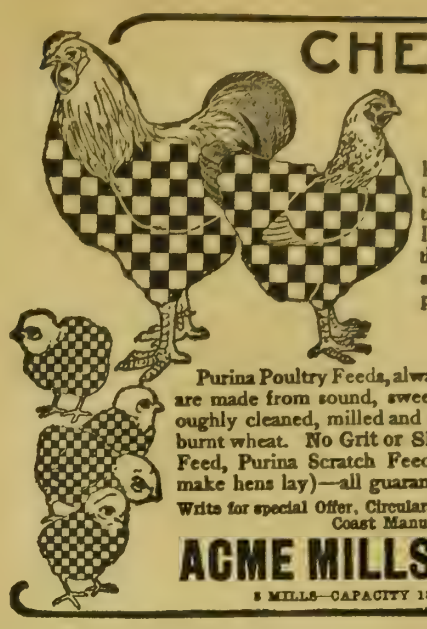
Eggs to meet the popular demand must be fresh and good.

Sell nothing but good, fresh eggs.

A wholesale firm that makes a specialty of handling eggs has this to say: "From the standpoint of wholesale shippers, we have always tried to impress upon all handlers of eggs, either dealers, merchants, or farmers, that to realize a good price for eggs they must deliver good goods. What the consumer wants is eggs that are fresh, not 'were fresh,' and in warm weather an egg that is more than four or five days old can not be called absolutely fresh, any more than a fish that is caught out of the water is fresh fish, after it has been out for the same length of time. If we could have all the eggs that we buy gathered the day that they are laid, and kept in a moderately cool, dry place and delivered to us not over four or five days old, we could realize a much higher price for them, and we believe the one great thing to impress upon the minds of the producers is care and promptness in marketing their product."

LAYING NESTS.

Good nests can be made of ordinary boxes or packing cases for canned goods, with the front cut down about two inches to make the access to them easy. These can be arranged on either side of house by puting two strips, 1x2 inches as supports for boxes to rest on. Put a board in a slanting position over the nests as a protection from sun and rain. You can put five of these boxes on either side of house. Do not nail them but just set them on the above dimensioned strips, they can thus be removed and cleaned out, white-washed, etc. Houses built this way can be moved from one part of run to another very easily.



CHECKERBOARD CHICKENS

Why are you raising Chickens? For your health or to make money? If to make money then you must feed right. Mixing a few things together doesn't make a Poultry Feed. It is a scientific proposition and requires a thoroughly equipped mill to grind and clean and blend grains and seeds in just the right proportion for baby chicks or laying hens.

The Purina Checkerboard Bag

Purina Poultry Feeds, always in checkerboard bags, are made from sound, sweet grains and seeds thoroughly cleaned, milled and screened. No smutty or burnt wheat. No Grit or Shell. Purina Baby Chick Feed, Purina Scratch Feed, Purina Egg Food (to make hens lay)—all guaranteed.

Write for special Offer, Circulars, etc., direct to sole Pacific Coast Manufacturers

ACME MILLS CO. PORTLAND OREGON

8 MILLS—CAPACITY 18 CARLOADS DAILY

Beef Scraps

GUARANTEED ANALYSIS:

Protein 65%
Fat 8%

Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in these Beef Scraps.

Raw Bone

GUARANTEED ANALYSIS:

Protein 25%
Phosphates 45%

Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods

WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

McCullough Poultry Farm

OFFERS THE BEST IN

Barred Rocks

OUR BIRDS WON as follows: Second and 5th cock, 4th cockerel, 2d, 3d and 5th hen, 1st, 4th and 5th pullet, 1st and 2d pen, and several specials. Our birds are line-bred, and are excellent breeders as well as show birds. We have sixteen pens mated up from which you can select eggs. Eggs from regular matings $2 and $3 for 13; from special matings $7 for 13.

CORRESPONDENCE INVITED

H. T. McCullough, Mgr., Box A171, West White Oak Ave., Monrovia, Cal.

Excelsior Mills

Excelsior Chick Food

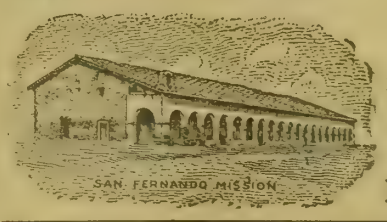
Excelsior chick food is a perfectly balanced ration for your growing chicks. Will raise the largest possible per cent. of your baby chicks. All pure food, no shriveled grain and filler used in its manufacture. Absolutely clean and free from dust. No waste.

The Best Food on the Market

Ask for Excelsior. If your dealer cannot supply you write us. Circular free if you mention the Cultivator.

Del Monte Milling Co., 242 Central Ave., Los Angeles, Cal.

Mission View Poultry Ranch



White Wyandottes
That Are Trap-Nested

Prize Winning, Large Egg Laying Strain. Won Nineteen Prizes in 1906!

Mammoth Bronze Turkeys Lakenvelders
Silver Laced Wyandottes

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Beef, Blood and Bone Will Make Your Hens Lay

This is not a medicine but a high grade nitrogenous food. Write for free booklet, "How to make Hens Lay." Our Poultry Foods are sold by all local dealers and manufactured solely by

The Pacific Guano and Fertilizer Co.

Also Pioneer Manufacturers of High Grade Fertilizers. Write for our free booklet, "Farmer's Friend." Valuable to all farmers and ranchers.

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Bemis Plymouth Rocks

Barred and White

Prizes Won at Alameda County Poultry Association Show, Oakland, 1907—22 Regular Prizes and 3 Silver Cups. Can furnish best birds and eggs at reasonable prices. No incubators lots furnished

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Best Incubator

On the Coast—best anywhere. Made right—prices right. Guaranteed. Catalogue free. Also great **Combination Brooder.** It is great—both indoors and out.

We also make the **Business Incubator,** capacity 100 eggs, $10 delivered. Hot water, copper boilers, nursery, Best Sheer Regular; everything the best. No mahogany, no frills, no furbelows. Just Business. The **Business Brooder** at $7 is not a box with a dangerous lamp inside, but a genuine Brooder, built for business and it does the business every time.

We also carry a full line of

Poultry Supplies and Seeds

of all kinds at our new Los Angeles store. New, fresh stock, at the lowest prices. Come and see us or send in your orders. We will treat you right.

Pacific Incubator Co.

707 So. Spring St. Los Angeles, Cal.

NOTICE

If you, Mr. Poultry Raiser, buy seeds or grains for your chicks, you know then that there are two or more grades and consequently two or more prices. High and low grade materials can be used in chick food. A. C. W. is made from all high grade material, if you don't believe that buy a sack, you can't fool little chicks—watch them thrive on A. C. W. No bowel trouble—see them eat A. C. W.—no waste—does not this tell the story. It took us months of experimenting to discover the right formula, but we have it. A. C. W. in sealed sacks only, at dealers or at our factory.

The Agricultural Chemical Works

901-907 Macy Street - - Los Angeles, Cal.

White Wyandottes Exclusively

I have purchased the entire flock and good will of the

UNIQUE POULTRY FARM

have carefully selected the best of this flock, which in connection with my own gives me the best lot of birds on the coast. If you want eggs from prize winners that will produce prize winners — write me. Eggs $1.50 and $2.50. Incubator eggs as gathered from yards $6 per 100. Special matings, $10 per 100 Also Pacific Coast Agent for Reliable Incubators and Brooders

W A. SEYMOUR 470 N. Beaudry Ave. Los Angeles, Cal.

Altadena Buff Orpingtons

N. HAYDEN & CO., BOX 1001, PASADENA

You can win with my stock and eggs because I have won and am winning. Matings this year very fine. Inspection invited. Write me your wants. **Eggs $2, $3 and $5 per 15.**

O. K. Trap Nests Shows the hen that lays the eggs and keeps her from eating or breaking it after it is laid.

O. K. Feeder Just the thing for your Scratch Shed. Send for circular explaining its workings.

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White Rocks and Black Minorcas

They are beautiful birds; Rocks as white as snow, Minorcas black as a crow. Cocks from W. M. Humphrey's and Harry E. Rose's yards. Eggs for sale. Best pen, $1.50 per setting of 15, or $7.00 per hundred. Second best, $1.00 per setting of 15, or $5.00 per hundred.

Chas. S. Hunt, El Monte, Cal.

COLUMBIAN WYANDOTTES

Winners at Breeders' Great Show, 1907. 21 prizes on an entry of 26 birds. Stock for sale, also eggs $3 and $5 per setting of 15; $20 per 100.

Ed. M. Burnell, South Pasadena, Cal.

SET Incubators and Hens with Eggs from good, healthy, farm-raised

White Minorca and White Wyandotte Stock

S. W. MORGAN, Sunnyside, California, has such Price $1.50 setting, $7 per 100

MY EXHIBIT OF

WHITE, BUFF AND PARTRIDGE Wyandottes

Won 26 Ribbons and Special Prizes at the Poultry Breeders' Show, 1907

R. D. Box D87 **L. E. BERKEY,** Fullerton, Cal.

WHITE, BUFF COLUMBIAN WYANDOTTES

And Golden Sebright Bantams, prize winners

Stock and Eggs in season

M. E. Dillingham, Box 67 **San Gabriel, Cal**

IMPROVEMENT OF CATTLE.

(Continued from Page 519.)

uously in the production of breeding stocks. From the breeder's standpoint, each succeeding cross becomes less and less satisfactory. Cross-breeding is more justifiable among those classes of animals such as swine, which reproduce quickly and abundantly, and mature early, for in such cases it is easily possible to return to the original types for breeding animals. While we must admit that cross-breeding has rendered valuable service, in the form of single out crosses, in the formation of new breeds and types, still, it should not be practised among cattle on the ordinary farm for three reasons, viz:

(1) It would tend to destroy the identity of breeds; (2) the results are in many cases uncertain; (3) it might render pure-bred females less capable of breeding true to type.

In-and-In-Breeding.

Because of the fact that the several terms used in connection with the breeding of various related animals are always not properly used, or understood, it may be well to define them.

(1) In-and-in breeding implies the mating of animals closely related, for a number of successive generations; it includes close relationships and continuous repetition. (2) In breeding implies the mating of related animals in a single instance, or at intervals among the generations, without much regard for the closeness of the relation ship. (3) Close breeding merely implies that closeness of relationship existed between the animals mated. (4) Line breeding implies the breeding of animals within members of one family, or one or more related families. It is virtually a continuation of in-and-in breeding, the relationships being less close.

It is astonishing the extent to which in-and-in breeding and in-breeding are allowed among the common stocks of the country, and this, too, by some persons who realize fully the seriousness of the practise. It arises, of course, from the selection of sires from among the offspring of the herd; in some cases, it may be due to a lack of means to make a suitable purchase, but in general, it is due to carelessness or indifference. When in-and-in breeding is carried to far, the following evils are likely to result, viz.: loss of size, delicacy of constitution, impaired reproductive powers, and in fact general deterioration.

The practise of in-and-in breeding, and in-breeding, should not be denounced entirely, for they may become useful factors when employed by those skilled in the art of breeding; they must almost necessarily be used in the formation of new breeds, where it is the aim to fix new characters in animals, and secure uniformity and permanence in the transmission of the same. But, on the other hand, the improver of common stocks has no occasion to resort to close breeding. He is not going to become a former of new breeds or types, but is going to improve his common stocks through upgrading, in which he will rely solely on the prepotency of the sires chosen to work the transformations by which each succeeding generation will be brought more near to his own standard of excellence.

'If a pure male were to beget progeny from females of the same breed, which bear a close resemblance to the male parent, this result would be a stronger evidence of prepotency in the male, than a similar result produced by mating him with females of mixed breeding, since the resistance to modification in the progeny of the females in the first instance would be stronger than resistance to the same in females in the second instance." This quality in a sire is one of the most important factors stimulating rapid improvement in any process of up-grading. It is more important in the sire than the dam, as the effect on the sire's side is more far-reaching. Probably one of the most difficult things in animal-breeding is to determine whether a sire is possessed of prepotency or not. It is conceded by some, that prepotency is the result of certain lines of breeding, and that certain visible characteristics must accompany it. The following are some influences tending to produce prepotency, viz.: (1) duration of purity of breeding without admixture of alien blood; (2) uniformity of type and results from animals in pedigree; (3) inherent vigor of type, race, or individual; (4) line breeding. To illustrate the first point; it is well-know that it matters little with what breed of type a Holstein bull is mated, the offspring is almost sure to resemble the sire markedly in characteristics, and particularly in color; it is doubtful if any breed of cattle has been bred pure for a longer period than a Holstein, and the inherent vigor of the breed is indisputable. The ability of the Hereford, also, to transmit uniformly its characteristic color markings, especially the white face, is an evidence of prepotency, the result of a long period of pure breeding. In selecting a prepotent sire, it is well to study the pedigree and ascertain as far as possible what is known relative to the performance of the ancestry as breeders, for an animal the progeny of prepotent ancestry, is certainly likely to be more prepotent than an animal whose ancestors have not been prepotent.

Illustrations Nos. 3 and 4 must be considered not singly, but as a group. The upper row of illustration No. 4 represents two pedigreed Holstein cows and, below, their calves sired by the Holstein bull, Count Colantha Alban 25148, shown in illustration No. 3

Chicks Hatched From Eggs Sent Us

From Brown Eggs, 4c
From White Eggs, 3½c

Minimum Charge, $2.50 per Hundred Eggs. No direct charge for infertiles.

Bihn-Schofield Method

51,000 Hatched Last Year, Shipped to Five States Combined Egg Capacity, 46,000

M. A. Schofield Gardena, California

Spargur's Trap-Nested White Leghorns

Cockerels for sale from my best hens. A few Light Brahma Hens and Roosters for sale. Eggs from I. R. Ducks and Blue Andalusians at $1.00 per setting, $5.00 per hundred.

H. G. Spargur, Soquel, Cal.

Baldwin's White Leghorns

Egg prices cut in two for May and June. Fine youngsters at reasonable rates. Good older stock cheap to make room. Send for latest price list.

Frank E. Baldwin

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GEORGE W. POPPELWELL

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Breeder of White Leghorns, Black Minorcas and Barred Plymouth Rocks. Eggs for hatching, $2 to $5 per setting. Single birds, trios and breeding pens a specialty.

Yards at Ranch (10) Phone Main 1583
943 W. Fremont St., W Stockton, Cal.

Black Orpingtons

Single or Trios

Will sell out at a bargain. Twenty-five head from prize winning stock. Cockerels, Pullets and Hens Prices.

Del Paso Poultry Yards
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SHADE'S RHODE ISLAND REDS

The World's best layers.
Write for Folder.

J. W. Shade San Bernardino, Ca

Chamberlain's Perfect Chick Feed

World's Chick Feed of To-Day. The only original **Dry Chick Feed.** All others are worthless imitations. **Chamberlain's Perfect Chick Feed** was used exclusively at the great St. Louis World's Fair during the 7 months. This is the highest compliment paid to any manufacturer of poultry food in the world. Perfect Chick Feed also endorsed by the U. S. Experimental Station and the Columbia School of Poultry Culture. All the leading poultry men of the country use Chamberlain's Perfect Chick Feed on its merits.

NOTHING JUST AS GOOD.

GERMAIN SEED CO.,

Pacific Coast Agents. LOS ANGELES, CALA.

SPECIAL PRICES ON TON LOTS.

Bees and Their Care

COMB HONEY PACKAGES.

BEFORE the section box came into use much of the comb honey was produced and sold in five and ten pound boxes. These had glass over one end, two or more augur holes in the bottom served as an entrance through which the bees worked. This was a poor contrivance as it did not allow enough freedom of passage between the brood chamber and the surplus department.

These boxes were in common use among advanced beekeepers from 1860 on until the section box drove them out about twenty years later.

The first sections were made to hold about two pounds of honey and were a decided improvement on the other method. They admitted of better communication with the brood chamber and it was found that at least double the amount of honey could be secured in a season by this method over that of boxes with augur hole entrances.

In order to build comb and store honey above the brood chamber there should be as little hindrance as possible to the admission of the bees and the warm air of the lower hive. No comb building can be done until there is a cluster of bees and a proper degree of heat.

The old-fashioned two-pound section was a good package and beekeepers would have done well to have refused to use anything smaller, but, under the plea that the trade called for a one-pound section a change was made to the latter size and in time it became the standard and the two-pound section went out of use.

But this change resulted in cutting the surplus department up into small compartments, again hindering comb building to a certain extent. It is well known that a loss in yield resulted from the use of the smaller section. However, there was no movement toward a better arrangement until the price of sections doubled within a few years. This increase in price was the result of two causes, first, the growing scarcity of basswood timber from which they are made, and, second, an agreement or understanding between the manufacturers which amounts to the same thing as a trust.

The Texas beekeepers were the first to make a change with a view to discard the one-pound section. A few years ago some of them began to produce what they call "chunk honey." The honey is taken in ordinary brood frames either shallow or full depth which are supplied with narrow starters only. Thus the combs being built entirely by the bees have no mid rib of foundation as is the case with section honey. This chunk honey of Texas is cut out of the frames and packed in tin cans, extracted honey of the same grade is poured in to fill up all spaces.

But recently an article by a Russian beekeeper, Mr. A. E. Titoff, in Gleanings in Bee Culture, has set me to thinking and I would like to set other beekeepers of the North West to thinking along the same line.

Mr. Titoff describes the comb honey packages that are used successfully in Russia. The honey is produced in ordinary frames and then cut and packed for sale in shallow tin boxes that hold a single comb of one or more pounds. The combs are cut to fit the boxes by special tools made for the purpose. Anyone can see that there would be but little leakage from the combs and but little trouble from granulation.

In Russia these boxes are covered with pretty litograph pictures right on the tin, showing bee hives and flowery meadows with bees flying round. Then, in large ornamental letters the kind of honey contained. It seems to me that would make the package more expensive than necessary. The boxes could be made from lightweight tin, and neat labels pasted on them. These labels would contain the beekeeper's address and guarantee, description of the honey, etc. This would make a neat, tasty package. The boxes could be placed in the grocer's showcase with the lids thrown back disclosing the surface of the honey comb. They could be crated for shipment, and would take a lower rate than section honey and suffer nothing from breakage. If saved, the boxes could be used for honey the second time. If not used again for honey it could be used for some other purpose. Sections are never used but once. The production of comb honey in one pound sections involves an immense amount of labor, and pretty well skilled labor at that.

Then there is this in favor of producing honey in the large frames: At least a third more can be produced with the same force of bees. I for one would say, let the expensive and troublesome pound section be done away with if we can adopt a method that will save labor and result in larger yields of honey.—In Sentinel.

ABOUT BEES.

There are 5000 bees in a pound.

The orchard is the best place for the apiary.

Queenless bees nearly always build drone comb.

Blame yourself if you are not making a success with bees.

We doubt if there is a better honey plant than alsike clover.

A comb building colony is ordinarily a strong colony.

Colonies with young queens are less inclined to build drone comb.

From the time it is hatched until it becomes matured, the bee is 21 days old.

It is estimated that it costs the bees 10 pounds of honey for every pound of comb.

A thin-bladed screwdriver, 12 or 15 inches long, is useful for forcing frames together, before wedging up.

The progress apiculture has made during the last period of years is mainly due to the movable comb hive, but it should not be forgotten that this great invention is, or should be, only an auxiliary for the accomplishment of certain ends. Combs should be undisturbed except when strictly necessary. It means a loss to the bees and beekeeper every time the latter interferes with the former's affairs. The condition of a colony may often be correctly judged from the behavior at the entrance. Always observe, seldom operate, should be the beekeeper's motto.—Exchange.

About 5000 species of bees are said to exist. Bees stand in social and constructive ability at the head of the insect kingdom and it may be presumed that this is why they exist in such numbers and variety. It is probably true, as we are told by scientists, that we can never fully realize the important influence which bees exert upon the plant world by pollinization.

In a good honey season Southern California will produce approximately 250 carloads, San Joaquin valley sixty-five cars and Inyo county eight cars, all of fifteen tons each. A carload of extracted honey is 250 cases and a carload of comb honey in 1200 cases, both about 30,000 pounds net weight of honey.

SPRING WORK.

Henry Ward Beecher edited an agricultural paper during a portion of the time he was stationed at Indianapolis, and had this to say in an article on "Spring Work on the Farm:"

"Seeds are sprouting, trees budding, flowers peeping out from warm nooks. Everything grows in springtime. Youth is springtime, habits are sprouting, dispositions are putting out their leaves, opinions are forming, prejudices are getting root. Now, take at least as good care of your children as you do of your farm. You break a colt, and break a steer, and break a heifer, and break the soil, and if you won't break your children, they will be very apt to break you—heart and pocket."

Never fret, repine or envy. Do not make your yourself unhappy by comparing your circumstances with those of more fortunate people: but make the most of the opportunities you have. Employ profitably every moment.

The Angle of a Hoe

Grasp a Keen Kutter Hoe as you would in the field—better yet, put one to actual service, and see how well it fits its job. The angle of the blade is *just right.* If you strike at a weed, you are sure to cut it—if you "hill" a plant, it carries a full load of earth each stroke and does it all in the *easiest position* you can assume.

KEEN KUTTER

hand tools for the farm—Forks, Hoes, Rakes, Scythes, etc., are fitted by *model* and *temper* for great service and long wear.

Keen Kutter bench tools are the best to be had. The list includes Planes, Saws, Axes, Hatchets, Hammers, Adzes, Augers, Drawknives, Chisels, Gouges, Bits, Braces, Gimlets, Squares, Bevels, Files, etc., besides every possible tool and cutlery for the household. Look for the trade-mark—it guarantees *quality.* If not with your dealer, write us.

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No Live Stock Diseases

IN ALBERTA, Canada there are no live stock diseases such as hog cholera, black leg, scabies or other contagious or infectious animal plagues.

If you are a farmer you know what a difference it would make in your annual profits if you did not have to take losses of live stock from disease into consideration.

Sunny Southern Alberta is the finest stock country on earth because cattle, hogs and sheep can be produced cheaper there than anywhere else, and because there is a good market right at the door of the stock raiser.

Since the great Canadian Pacific irrigation project has been started the farmer who likes diversified farming will find a paradise in Alberta as he can raise all kinds of live stock at the lowest cost and he can produce practically all kinds of cereals and vegetable crops at the same time his live stock is growing and developing.

On the great Canadian Pacific irrigation tract hundreds of farms have been laid out a portion of which are under irrigation and a portion of which can be devoted to the live stock industry—In other words you can buy a natural range for live stock which produces the finest grass to be found anywhere and you can raise on another portion of your farm forage crops for winter feed, sugar beets, wheat, oats or any other vegetable or cereal, you desire to cultivate.

If you desire to engage in the dairying business you will find conditions perfect in Alberta—The government operates the dairies and pays the farmer for his cream every cent there is in it, simply retaining enough to operate the dairies and to pay for the cost of marketing the butter.

Of course, if the farmer desires to make and market his own butter he is at perfect liberty to do so, but the government can make it and market it at better prices and at lower cost than the farmer possibly can and the additional profit goes to the man that milks the cows.

Land can now be bought at prices so low and on terms so easy that no man should be without a farm. If you want to know how to see Alberta at the least possible cost, and how to secure lands that will make you independent in two or three years we will be glad to tell you—Write for full information to

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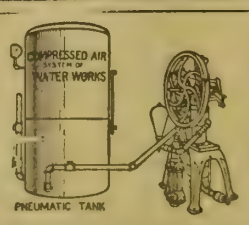
Sales Department, Canadian Pacific Railway Irrigated Lands. 3



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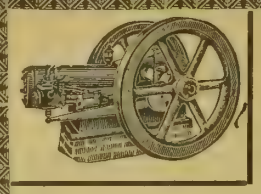
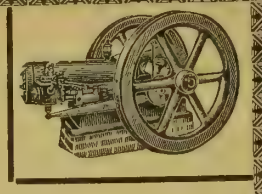

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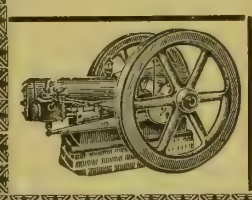
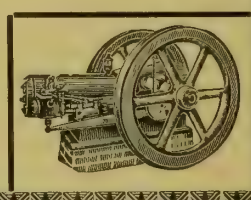

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

Indigestion in Calf.

What was the matter with this calf? When four days old, I took the cow, drove her and the calf one mile, and let it suck my fingers the next morning until it had swallowed three pounds of milk, a mixture of its mothers and that of other fresh cows. That night it seemed to prefer to sleep than drink. It would not suck my finger. The next day I saw that it had passed a little bloody dung. Its mouth was cold. I tried to get it to nurse its mother, but it wouldn't stand up to suck while I held it. I next gave it a teacupful of raw linseed oil by the means of the bottle, and in about an hour it was dead. Post mortem showed that no milk had gotten into its lungs. The paunch was filled with curd and watery fluid with a decided acid smell. The abdominal cavity had a watery fluid in it around the digestive organs.—H. M. Mc.

Calf troubles need prompt handling or the patient is dead before we know it. In raising calves by hand rennet tablets are invaluable. The kind that come for junket, can be purchased at any drug store for ten cents a package, will answer just as well as the more expensive tablets used by the cheese makers. Mix the tablets with a little warm water and add to the milk just as the calves begin to drink it. Indigestion is quickly checked when this is used and the calves do not get off their feed.

If the case had occurred here we would first have removed the calves to a new place, leaving the sick one where it was. At once two raw eggs would have been put down the calf's throat and a warm woolen blanket wrapped around him. If he was lying down then hot water bottle under the blanket and along the spine to get him warm as fast as possible. In two hours a pint of hot milk with a tablespoonful of extra cream in it with the rennet tablet should be given. In two hours repeat the eggs, and in two hours more the hot milk. If the calf has rallied, and they usually do, readily under this treatment, make a blanket and sew it on him so he can not get cold. Give a dose of the hot milk four times a day mixing into it the two eggs, as soon as the calf grows strong it can be gradually worked back to the regular feeding time of the other calves. We have found it well to use a little dilute boric acid on the naval cords of all the newly dropped calves and colts. Clean and whitewash the stable before putting any other calves in it after having had a case of the scours.

Scrofula.

I have a heifer calf five weeks old that has some small sores breaking out on the skin, which dry up and the hair comes off with the scab. Its ears are now almost entirely naked. I feed it as I feed all my calves, ten days full milk, and at three weeks old it gets straight skim with a little oil-cake meal jelly added.—W. B. Delsur.

This calf may be scrofulous. It sometimes happens in well bred cattle. Better remove the well calves from this one and if is a contagious trouble they will be safe from infection.

Make an emulsion of melted soap and hot water adding coal oil to it with a few drops of carbolic acid. Mix until it does not separate. Usually a cake of soap and a quart of oil is about right. Wash the spots with this hot and cleanse them thoroughly. Then rub on the following: Lard, three ounces; Sublimed sulphur, one ounce. Bicarbonate of soda, two drains. Vaseline can be used instead of lard or any clean grease from the kitchen that is free from salt. Bicarbonate of soda is the baking soda used in the kitchen so this can be prepared at home. If the calf is in good condition I should cut out some of the oil meal and give it instead a gruel of bran and rolled barley, about a teacupful each meal. If it is thin add a little more of the gruel and give it a junket tablet to aid in the digestion of the food. Whitewash surroundings and burn up bedding that is around. Use carbolic acid or some corrosive sublimate tablets in the white wash to purify the surroundings.—M. E. S.

Holsteins Have Horns.

Do thoroughbred Holstein cattle have horns or not? This is to settle a very warm argument.—A. M., San Francisco.

The Holsteins have horns naturally. The dairyman removes the horns to help him, as the cows can be placed in closer quarters if they have no horns. It also saves the injury that they can do to each other by hooking the udder. Feeders dehorn the steers they are fattening and think it pays, as they are more docile. Also in shipping more dehorned animals can be put into a car. The dehorning may be done while the calf is very young, when a week old, with caustic potash, or when the animal has reached maturity the horn may be removed with a clipper designed for the purpose.

There are several strains of cattle that have been formed by breeding together the muleys, also a strain of Jerseys, and also the Polled Angus, though it is said that sometimes even they revert and show horns. A bull dehorned after maturity, is disarmed and rarely regains the confidence in his abilities to be master of everything in sight.

A little girl was looking at some cows and suddenly ran to her mother in fear. The mother said: "Why, my dear, the cows cannot hurt you, they have no horns." "Yes, they can bump me with their pompadours."

A dehorned bull can inflict severe injury with his head.—M. E. S.

Sore Leg.

About a week ago my cow walked lame. I found her left hind leg was sore just above the hoof. I put some liniment on that had turpentine in it, but that hurt her. Have been bathing it with hot water and using a little carbolic acid in the water. The leg swelled up some, but not a great deal.

After a few days the right leg got as bad as the other, now she can hardly get around at all.—Subscriber, Anderson.

The causes may be insect bites, or it may be alkali, particularly if the cow can stand in water and then in alkali dust. Wash the legs with soapy warm water containing twenty drops of carbolic acid to gallon. Then grease well with carbolized vaseline, or use an ointment of one dram of oxide of zinc to one ounce of lard. Keep the cow in a place free from dust until the trouble disappears.—M. E. S.

Lumps on Leg.

I have a four-year-old cow that has a small sore on her knee. It has been there some months. About two weeks ago lumps, some of them the size of a walnut, began to form all along the vein on the outside of the leg. She does not seem sick, eats well, hair is glossy, and seems not to mind the lumps which are not sensitive to the touch.—A. J. R.

This seems to be a local infection resulting from the sore on the knee. The information is hardly full enough to be positive. Is the character of the sore hard and dry, or soft and moist? A careful examination may show a splinter under the skin or some other foreign substance acting as an irritant. The sore is evidently the cause of the lumps, and we would try to heal that first. Leave off the liniments. Wash the sore with a weak solution of carbolic acid in water with castile soap, using the water hot enough to be comfortable to the cow.

If it discharges from under the skin, inject with a 10 per cent. solution of hydrogen peroxide. Apply to the sores and lumps; brown citrine ointment mixed half and half with lanoline; apply twice a day with friction. —M. E. S.

Garget.

My cow has a sore teat. A hard lump is in the upper part of the teat and feels something like a compact mass. Some milk comes out of the teat and a little lumpy substance. I think her udder is a little bit inflamed.—A. B. G., Ukiah, Cal.

A touch of garget, is the trouble; avoid dry feeds, give her grass and a good physic, using a pound to a pound and a half of epsom salts with a tablespoonful of ground ginger. Bathe the affected parts with hot lard or hot water and after a half an hour of gently rubbing, bathe the part with spirits of camphor. If the case is a bad one, refer to the Cultivator of last month for full directions for formenting the udder with hot flannel.—Mrs. M. E. S.

Probably Garget.

I have a fine heifer which calved about two weeks ago, she seemed to do fine in every particular, except we find after the milk stands a short time there is a little settling in the bottom of the vessel which we take for blood.—W. W., Santa Cruz.

Bloody milk comes from rough handling of the udder, from blows, from sexual heat and garget. It is safe to begin by giving the cow a dose of epsom salts, one pound to a half gallon of warm water adding a heaping tablespoonful of ginger. Bathe the udder gently with weak hot vinegar. Milk gently and thoroughly. By milking one teat at a time and putting the milk into separated marked pans the quarter affected can be located and milked with greater care. Avoid any irritating foods, giving bran and good hay or if in pasture confine her to that which contains no weeds.—M. E. S.

Grasshoppers.

We are suffering form a plague of grasshoppers; which threaten to destroy all our crops. Can you tell me any way to treat our garden to prevent them attacking it?—P. N. W.

There is but little hope of "preventing them attacking" only to slaughter before that stage of the game.

In a short time, possibly next week, the Cultivator will have an extended article on latest suggestions for handling the grasshopper question.

Too Rich.

I am informed by my customer that he can not use my eggs because the yolk of the eggs is two yellow, and that they don't look good. Now the chickens are all in good healthy condition and they have plenty of green range, plenty of grain, but no alfalfa. —P. G.

The trouble with your hens is they have been fed too rich food, too much meat or grain, or both. Feed lighter of grain and more green food. A good plan is to get some good egg food manufactured by some reliable firm and feed according to directions. I don't mean a tonic, but a well-balanced egg-ration. You will get more eggs and you will not be bothered with the trouble of which you speak. —F. H. T.

Apricots, Morning Glory and Pears..

Is it advisable to cut back old apricot trees as they seem to have too much tree and never much fruit? They are the Royal. At what time of the year?

How can I kill the morning glory (wild). It grows about 2 feet high and is dark green and resembles the cultivated morning glory in flowers and shade of leaves.

Will pear trees bear when they are grown from the suckers or shoots springing from other trees? And can they be grafted at this time of the year?—Harry E. Brockman, Corona.

Trim your apricot trees so as to retain the shape of the tops. Select main branches so as to accomplish this, trimming them up to straight stems. Do this in the winter time.

Morning glory can only be kuled by cutting it off under the ground often enough to prevent its getting through the surface. Every green leaf it makes gives it renewed vigor. Make it a rule to do this often enough to accomplish this, and in about two years you will have killed it out; it cannot live over two years unless it makes a green top occasionally.

Pear trees cannot be grafted well after they have leafed out. The proper time is before or at the time the buds begin to open.—J. W. M.

Outdoor or Indoor.

Will you kindly express judgment as to the comparative merits of outdoor and indoor brooders for chickens; particularly in regard to the vigor of chicks raised by the two methods.—Robert J. Teall.

There is no difference in the indoor and outdoor brooder so far as raising chicks is concerned or there should not be. In an outdoor brooder the lamp is better protected so it will not blow out; also the brooder is made so it will offer protection to the chicks in a rain, having a water-proof roof. The indoor brooder is not made storm-proof, and as the name signifies is made to be used in a house or under a shed. Either, if run properly, will raise strong, healthy chicks.—F. H. T.

Rubber Boots.

What can I put on my rubber boots to keep from leaking?—J. M. Arroyo Grande.

There is but little hope for leaky rubbers. Better buy new pair of high grade. It's barely possible that you can take some of the thin rubber of the inner tubing of your boy s bicycle and with a good rubber cement which is sold at nearly every store, patch up the boots for a time, but "mending rubber" is a makeshift at best.

A HINT FROM COMMISSIONER PEASE.

San Bernardino County Horticultural Commissioner Pease, gives us the following valuable hint:

"It has been stated by some ranchers who are at present troubled by the cut worms that they will not again sow peas for cover crop because the cut worms breed in the peas.

Cut worms breed as well on many kinds of weeds, but it is only necessary to have the cover crop plowed under before April 1st, to be secure against the cut worms.

The Red Spider is again appearing in threatening numbers on Citrus trees, and need attention to prevent damage.

This may be termed a Red Spider year."

SCIENTIFIC FARMING.

In the days of our grandfathers it did not matter so much that farmers gave little heed to the science of agriculture. They had land to spare, and taxes were low. They and their sons did most of the "plough deep and rough," and let nature do the rest.

The case is different now. Land is scarce and costly. Taxes are high. Many of the boys go away to the cities to seek their fortunes. Help must be hired, and wages are an item. All the expenses of living have greatly increased. The children must be educated. The home must be furnished.

The great matter is that the soil has lost its primitive richness. Nature must be helped. The farmers of Germany and France long ago learned how to make the most of every square yard of land; not only by a perfect system of drainage, and scientific rotation of crops, but by the exact science of fertilizing. American farmers are just beginning to appreciate the possible fertility value in each acre of soil.

Many of the greatest scientists in the world have made exhaustive studies of soil enrichment; and they have all come to one conclusion on the special need of worn and tired soils. The first vital quality that is exhausted from the soil is nitrate. That element must be put back into the soil.

Farmers only need to remember that 100 pounds of nitrate of soda, enough for a whole acre of land, costs less than $3.00 They can see whether it pays. That is what science can do for them. Any furthur information can be had by writing to Dr. Wm. S. Myers, John street and 71 Nassau, New York, N. Y.

Don't Feed

the little chicks anything for the first twenty-four hours. Then feed them dry.

West Coast Chick Feed

Bright, pure, clean, made of the finest grains, seeds, meat, etc., in just the right proportion to make a full, rightly-balanced ration. They like it, too, and eat it up clean, for it contains no waste whatever. It keeps them healthy and it will make them feather faster, grow faster and larger than will any other feed. They need nothing else until over half-grown. If your dealer does not keep it, and will not get it, send $3.35 for 100 lbs., freight prepaid by us to any point in California.

Are your fowls a little off—don't you want to tone them up?

West Coast Poultry Tonic

will do it sure. It is one of the greatest cures for ROUP and all kinds of colds.

Hen Fruit Pays—if you want more, feed

Egg-More

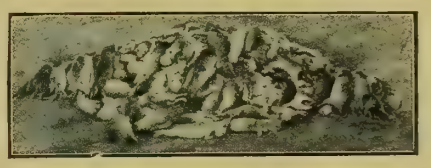
That highly nitrogenous poultry food, rich in protein, to keep the poultry in good health, and enable the hens to convert the surplus aliment into eggs. Just the right addition to a good grain ration.

West Coast Lice Killer and Killamite (powder)

are most effective pest destroyers. Nearly all the diseases of poultry may be attributed to lice and mites. Don't let them get the best of you. Get the best of them. And did you know that Killamite is just as good for killing plant insects without harm to the plant. Testimonials of public gardeners and others. Try it on your roses. 50c sifting cans by mail if your dealer won't get it for you.

West Coast Poultry Foods and Remedies

are the best made and, quality considered, the cheapest. If your dealer doesn't sell them, send to us. Booklet free. Send us names of 12 persons keeping poultry and we will send you free "The Poultry Manual" by those high authorities F. L. Sewell and Ida E. Tilson, profusely illustrated.



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Not one of the ordinary poisons, but in a class by itself. Endorsed by Agricultural colleges and Experiment Stations. Has had greatest success in the Middle West. The secret being that it is most attractive to gophers, squirrels, etc., and sure death to them. It gives the grain a glossy coating, retaining the poison for weeks. Hundreds also die in their holes by eating it there. We have bought the patent right for this section and are selling at the eastern price, lower than the ingredients can be bought at a drug store. Money refunded if not as represented—so printed on the bottle. If your dealer does not keep it sent $2.50 for two bottles, express prepaid by us—not less than two bottles.

Confident that a trial will prove beyond question that the best condition powder made is

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We will send to new customers one 25-lb.

$3.00 PAIL FOR $2.00

or one 50-lb. $5.75 double sacks for $3.50, and will prepay the freight to any point west of the Rockies. Not more than 50 lbs. to each one, and we reserve the right to withdraw this offer without further notice. No cheap premiums, no gaudily colored pictures, but a legitimate business offer to induce a trial, hoping to add many steady customers. We are charging up the difference to our advertising account, feeling sure that a trial of the goods is the very best advertising.

No strings to this offer. Just send us your name, the freight station to whch you want the goods shipped, mention this paper, and we will do the rest. Send money order or check with your order, and if every thing is not exactly as represented your money will be refunded. The First National Bank of this city, or Bradstreet's Agency, or any leading firm, can inform you as to our reliability. WEST COAST STOCK FOOD has for many years been a standard condition powder in this section. See our full page adv. in the March 7th and 28th issues of this paper or send for circular with testimonials.

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HEAVY TRUCK HARNESS

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Insist on the **"hand brand"** on your horse furnishings.

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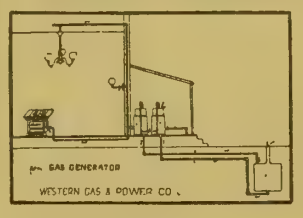

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Household Department

PEOPLE WILL TALK.

You may get through the world but
'twill be very slow
If you listen to all that is said
as you go;
You'll be worried and fretted and
kept in a stew
For meddlesome tongues must
have something to do—
And people will talk.

If quiet and modest, you'll have it
presumed
That your humble position is only
assumed.
You're a wolf in sheep's clothing,
or else you're a fool;
But don't get excited—keep perfectly cool—
For people will talk.

And then if you show the least boldness of heart,
Or a slight inclination to take your
own part,
They will call you an upstart, conceited, and vain,
But keep straight ahead—don't stop
to explain—
For people will talk.

If threadbare your dress and old-fashioned your hat—
Someone will surely take notice of
that,
And hint rather strong that you
can't pay your way;
But don't get excited whatever
they say—
For people will talk.

If your dress is in fashion, don't
think to escape,
For they criticise then in a different
shape—
You're ahead of your means or your
tailor's unpaid;
But mind your own business, there's
naught to be made—
For people will talk.

Now the best way to do is to do as
you please,
For your mind, if you have one, will
then be at ease.
Of course, you will meet with all
sorts of abuse;
But don't think to stop them—it's
not any use—
For people will talk.

A PANE OF GLASS.

"I'M sorry, Fred, for I like the girl, but I can't have this pilfering going on. The best thing will be to discharge her at the end of the week. This stealing has been going on for a month now, and as far as I can find out she is the first one here in the morning and alone long enough to help herself. I have noticed, too, that she has a number of trinkets lately quite out of reach of her salary."

Fred bit his lips and was silent. It would have done no good to have told his father that he had given the trinkets, conveyed in such a way that she should not know the donor.

He had been only waiting for a favorable time to tell her his sentiments, and now she was threatened with disgrace.

"I'll stake my life, father, that she hasn't a trinket about her but what is honestly come by," he exclaimed, after a moment's embarrassed silence, "and that she is a thoroughly honest and trustworthy girl. Don't discharge her this week, father. Give her—give me one week more, and let me see if I cannot discover the thief. I promise that if I find it is indeed she I will not try to shield her. But let me have that much time to try to discover the real culprit."

"I don't see how you are going to do it," replied Mr. Adams, looking around the apartment. "There is no way that I can see but getting here ahead of the thief, whoever it is—and, of course, the money will not be taken with you looking on, and there is no way for you to conceal yourself in the room here. You know I have been accustomed to leave money in that drawer, for the convenience of giving change if it should be needed, before I get down in the morning, and nobody knows but you that I am in the habit of counting it every night before leaving, and that for the last month it has not balanced with the cashier's account, but constantly shows a deficiency. It must be taken in the morning, before we get here, and Miss Allen is, as she has said herself, the first one here—indeed, she has a key of her own, so that she can get in as early as she pleases."

Fred's eyes had been roving around the room while his father was speaking. There was, as he said, no possible chance of his concealing himself anywhere in the room without making the fact of that concealment evident and thus defeating his purpose; but as he glanced over at the desk, which stood at the opposite side of the room near the window, and in one drawer of which was kept the money for such miscellaneous expenses as postage, telegrams and other incidental small expenditures, and from which sums that could not be accounted for had been missing for a month past, his face lightened. The window faced another window of a large building, the side of which was separated only by a narrow court and which was for the time vacant, and a suggestion occured to him which he seized upon at once.

"I'll admit that it does look black against her, father," he said. "But I believe I can find a way in a week's time either to vindicate her or prove that your suspicions are just, though I believe that it will vindicate her. Just let me have one more week, and if I don't discover the culprit by that time I will make no further plea."

Not only Margaret Allen, but the three other girls in the employ of Mr. Adams' photographic establishment missed the frank, bright smile and pleasant word with which his son had been wont to greet them, and into Margaret's pretty eyes crept a look of hurt surprise mingled with a deeper feeling that went to Fred's very heart. But he maintained his demeanor unshaken, meanwhile studying each face and act of the girls with a scrutiny he had never bestowed upon them before, and by night he had pretty well settled in his own mind as to the culprit, but to make that suspicion a certainty was the task that remained.

The next morning the girls were at their work as usual when Mr. Adams and his son entered the establishment. Both gentlemen looked serious, but on Fred's face was also clearly manifest a look of triumphant satisfaction.

"Young ladies," said Mr. Adams, addressing his employes. "I have rather an unpleasant subject to introduce this morning, but it is not of my own choosing and I would prefer to give you an opportunity to acknowledge your act than to charge you with it. Which of you is here first in the morning?"

"I believe I am, sir," answered Margery, to which the others assented.

"Well, I am sorry to report that for some time past I have been missing small sums of money from the drawer where I keep the change for incidental expenses and to which you all have access as occasion requires," continued Mr. Adams. "Now, I will put it to you formally, Miss Allen, do you know anything in regard to the missing money?"

"I do not, sir," she replied lifting her eyes to his face with a look of perfect innocence and truthfulness, while Fred, in his delight and joy, could scarce restrain himself from hugging her on the spot.

"Miss Wilson, do you—or you, Miss Douglass?—or you, Miss Ferris?"

A most emphatic denial was the unanimous response.

"Well," said Mr. Adams, "it seems that we must resort to some other means to ascertain the culprit. What have you to say, Fred?"

"Merely to ask the young ladies if any of them recognize any one they know in this," responded Fred, drawing out a small plate and laying it before them. There was an excellent photograph of the interior of the room, and bending over the open drawer in the desk, in the act of taking some silver from it, was the unmistakable profile, face and figure of Lottie Wilson.

With a startled cry she drew back, covering her burning face with her hands.

"If you will tell me the whole story

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I will let you off with no greater punishment than being discharged from my service," said Mr. Adams, sternly. "Otherwise I shall call an officer and hand you over to him forthwith."

Overcome with terror at this threat, Lottie sobbingly confessed that she had been the thief, having coaxed the housekeeper to let her in on the plea that she wanted to get to work early, and then slipping out again and not returning until after Margery had arrived, so that if the theft was discovered suspicion would fall on her. Mr. Adams heard her to the end, then, quietly requesting her to get hat and cloak, attended her to the door and bowed her out. Then returning to Margery, who was standing a little apart from the rest, he said in a tone of more than wonted kindness:

"There is a little story connected with this discovery which there is not a fitting opportunity to tell here, but if you will allow my son to escort you to my house this evening to dinner, I will make you acquainted with my wife, and you can hear the sequel of this affair."

Margery bowed, too happy to speak after one eloquent look from Fred's eyes, and went back to her duties, with a heart bounding high. At the appointed hour Fred accompanied her to his home, where, after being introduced to his mother, who took the orphan girl to her heart and embraced her at once, they told her the story.

"The moment I looked at that window of the building opposite," Fred said in conclusion, "it occured to me that I might make use of it as a point not only of observation, but from which I could obtain a view of the place and the culprit. By investigating and experimenting I found that I could photograph the room accurately. And I had a shade put up, leaving only one pane of glass exposed, in front of which I could place my machine and do the work without being seen in return. I was there this morning by daylight, arranged my apparatus, and about half an hour before your coming the door opened and Lottie Wilson came in. I waited until she was in the very act of taking the money, as you see, and then secured my snapshot that vindicated you, my darling, and has made me the happiest man alive—all by the aid of that blessed pane of glass."

He had not intended to make his avowal of love in such a fashion, but his joy and affection burst from him simultaneously, and the next moment he had her in his raptuous embrace, from which she made no effort to disengage herself.

"Good-by, my dear daughter," Mrs. Adams whispered as she bade her good-by before resigning her to Fred's care to escort her home. "You shall be my daughter in a few weeks if I have anything to say about it."

And that she not only had considerable to say about, but said it, was evidenced by the modest but delicate little wedding that took place not long after, at which Fred and Margery were the principal parties interested, and, if their faces were any indication, the very happiest people that could be found anywhere.

HOMELY HINTS.

One of the simplest means of loosening a rusty screw is to apply heat to the head of the screw. This may be done by means of a small bar of iron being heated red hot and allowed to come in contact with the head of the screw.

A rusty nail may be drawn by first driving it with a hammer to break the crust of rust.

If your shoes stiffen after a tramp on a rainy day, wash them over with warm water and then rub castor oil thoroughly into them. This makes the shoes soft and elastic.

When a broom becomes shorter on one side, and the ends of the straws become as sharp as needles, dip it into hot water, trim it evenly with the shears, and you will have a broom nearly as good as new.

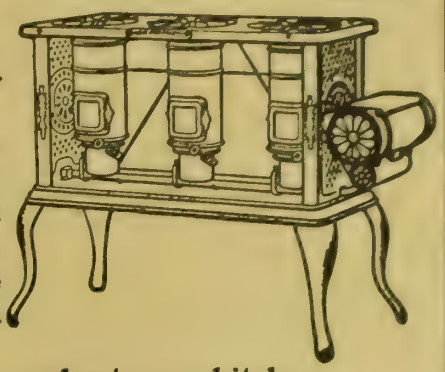
A careful housewife has discovered that common salt sprinkled over any object that is stained with lamp-black will remove the dirt if rubbed in and then removed. Several applications may be necessary.

Enamel ware that has been burned or discolored may be cleaned by applying a paste made of coarse salt and vinegar. A little vigorous rubbing will remove the ugly marks.

Use A

NEW PERFECTION

Wick Blue Flame Oil Cook-Stove



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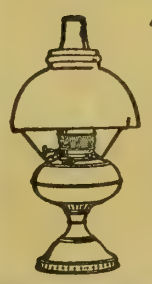

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AT REDUCED PRICES BALANCE OF season from my prize winning Barred Rocks; won all special and 13 regular prizes on Barred Rocks at late Los Angeles show. Eggs from best pens, $2.50 per 15; $10 per 100. Can furnish any quantity. Also offer extra bargains in breeding stock. CHAS. E. SMITH, Gardena, Cal. San Pedro Interurban car to Smith's Crossing.

McKINLEY POULTRY FARM—BREEDERS of Bluff and White Wyandottes. Member American Buff Wyandotte Club. Golden Seabright and Pyle Game Bantams. Eggs $3.00 and $2.00 per 13. Take San Pedro Interurban car to McKinley, first house north. BOX 11, R. F. D., Gardena, Cal.

BLUE RIDGE POULTRY YARDS, W. H. Brown, Prop., 128 Ave. 32, Los Angeles, Cal. Breeder of Blue Andalusians. Won more first prizes than all our competitors combined. All specials went to our strain. Eggs $1.50 and $2.00.

WHITE LEGHORN AND WHITE WYANdotte eggs for hatching, from extra choice, trap-nested, bred-for-eggs stock. Leghorn eggs $5.00 per 100; White Wyandotte eggs $1.00 and $1.50 per setting, $6.00 per 100. F. T. McLAUGHLIN, Gardena, Cal.

S. C. WHITE LEGHORN EGGS FROM THE bred-to-lay Blanchard strain. Large birds. $1.00 for 15; $6.00 per 100; Free city delivery. C. M. GIBBS, R. F. D. No. 4, Los Angeles, Cal. Phone W. 591

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WHITE WYANDOTTES—DUSTON AND White—all strains. Stock for sale. Eggs for hatching, $2 per 15; $10 per 100. Also Peafowls and Plymouth Rock Homing Pigeons. MRS. N. P. BAILEY, Colegrove, Cal. Cor. Melrose Ave. and Gower St. Telephone, Home E9006.

COLUMBIAN WYANDOTTES, THE FANCY and Utility Fowl. Eggs and stock for sale. Eggs from Pen No. 1, headed by First Prize Cock at late Los Angeles show, $5 for 13; No. 2, $3. Also Black Tailed Japanese Bantams, $4 per 13. Frank J. Ironmonger, Hollywood, Cal.

SPECIAL SALE—WILL SELL CHEAP 1ST, 2nd and 3rd prize Barred Rock cockerels at late breeders' show, these are grand birds and will give special price if taken at once. Also eggs. Write your wants. FRED ESPE, 445 South Main street, Los Angeles, Cal.

FOR SALE—A FEW MORE WHITE LEGhorn pullets, eight dollars per dozen. Tom turkey and two hen turkeys, seven dollars. Black Minorca Eggs for hatching, $1.25 per 15. W. O. SHAW, P. O. Box 201, San Luis Obispo, Cal.

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MISCELLANEOUS.

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At the reserve plant of The Times on San Fernando street, are two 50-horse-power engines which represent the most modern ideas in engine building. They are known as Western Special engines and were supplied by the Western Gas Engine Company of this city, of which W. H. Frost is president.—[L. A. Times.

The Produce Markets

Los Angeles Markets

LOS ANGELES, May 15, 1907.—A slightly weaker feeling prevails on the market, at least in most lines. This is especially true of strawberries of which an immense quantity has been forced on the market the past week. On Tuesday the finest of stock could be purchased at 4 cents, with indifferent buying for any price.

Butter.

Butter is easier though quotations are practically the same as last week.

Valley Creamery	47½
Coast fy,	45
Cooking	20

Cheese.

Cal. Young American, per lb	19
California Anchor	18
Cal 3-lb. hand	20
Northern, fresh	15½
Domestic Swiss	22
Imported Swiss	32

Eggs and Poultry.

Receipts of eggs continue larger, with a slight weakening of the tone of the market. A drop of one to two cents is noted since the last report.

Eggs, local, per doz	20½
Northern Candled	18

The firm market which Fiesta created for dressed poultry, has weakened with the cessation of that extra, and poultry rules about one to three cents lower

The following are average prices which dealers pay to producers for live weight:

Hens, per lb	13
Young Roosters, per lb	17
Fryers	20
Broilers, per lb	26
Old Roosters	7
Turkeys	17
Geese	12
Ducks	15@16
Squabs, per doz	1.50

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lbs	7.50@8.00
Prime Steers	5.00
Heifers	4.50
Calves per lb.	5
Sheep, ewes, per head	5.00@5.25
Lambs per head	4@4.25
Wethers	**5.50**

Potatoes.

No material change is made in the potato market. If any thing, the tone is weaker with larger supplies of old stock coming in with a manifestation of desire to unload all old stock as soon as possible.

Colorado	1.60
Minnesota	1.65
Early Rose, Eastern,	2.25
Oregon,	1,80
New	2.50
Onions	3.00

Vegetables.

Ample supply of green stuff is on hand with demand for best grades fairly good. Indifferent stocks have little attention. Long necked squash from Colorado Desert Country, is the latest claimant, while one lone crate of muskmelons proved a drawing card as a curiosity.

Asparagus, lb	10@14
Beets, per doz	20@30
Bell Peppers, Green, lb	12@15
Cabbage, sack	40@60
Chili Peppers Green	20
Chili, Dried, per lb	13@13½
Cucumbers, per box	2.00@2.25
Carrots, per doz	20
Celery, per doz	40@50
Carrots, per doz	35@40
Celery, per doz	30@50
Garlic per lb	6
Green Onions, doz. bunches	15@25
Lettuce, per crate	40@75
New potatoes, per lb	3
Parsnips, per doz	35@50
Rhubarb, per box	1.40@1.50
Radishes, per doz	**15@20**
String Beans, per lb	7@8
Sugar peas, per lb	3½
Summer Squash, crate	75
Tomatoes, Mexican crate	2.00@2.25
Turnips, doz. bunches	10@20
Peas, sugar, per lb	2@2½
Squash, long neck	50
Artichokes	75
Water Cress per 100	40@50

Citrus Fruits.

Lemons	2.00@3.50
Valencias	1.50@2.75
Navels	1.25@2.50
Grapefruit Seedless	3.00@3.25
Grapefruit Seedlings	1.25@1.35

Fresh Fruits.

Cherries are the latest favorite and are getting down close to bottom prices, 12½ cents being greatest this week. Raspberries are holding strong and in slight supply.

Apples, Ben Davis	1.50
Johnathan	2.00@2.75
Pearmains	2.00
Apricots per box	2.50
Blackberries	7@8
Cherries, loose	12@13
Cherries white per drawer	1.50
Cherries, black	1.00@1.75
Figs	60
Gooseberries,	15@18
Logans	7@8
Loquats,	2@3½
Raspberries	8@10
Strawberries	3½@4½

Dried Fruits.

Evap. Apples, fancy, per lb	9½
Apricots,	17@17½
Peaches	12½
Pears	12@13
Prunes, fy,	5@8

Raisins—Four-Crown cluster, per box, $2.75; loose, 50-lb. box, 9c per lb.; 3-Crown London layers, per box, $1.95; loose 50-lb. box, 8½c per lb.; do, 2-crown, per box, $1.75; do, loose, 10-lb. box, 8c per lb.; seedless, fancy bleached, per lb., 12½c; Sultanas, unbleached per lb., 8½c.

Beans, Dried

Limas, No. 1, per cwt	4.75
Pink No. 1	3.00
Lady Washington	3.00
Small White	3.55
Black Eyes	5.50@6.00
Garvanzas	5.50@6.00
Lentils	12@15

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb. cans,	8
Light Amber	6½@7
Comb, water white, 1-lb. fms	15@16
Light Amber	14

Nuts.

Almonds per lb	19@25
Peanuts, Virginia	9
Peanuts California	6@7
Walnuts, No. 1 S. S.	14@15

Hay.

Barley, No. 1	14@17
Barley No. 2	12@14
Alfalfa, Local, per ton	14.00@16.00
Plain Oat Hay, No. 1	12.00@14.00
Plain Oat Hay No. 1	18.00@20.00
Wheat No. 1	14.50@16.00

Grain.

All grains even marked up this morning as indicated in the following:

Furchasing prices f. o. b., Los Angeles are:

Wheat, new, per cwt	1.45@1.65
Barley	1.17½@1.22½
Corn, per cwt.,	1.30@1.35
Cracked Corn	1.45
Feed Corn Meal	1.50
Shorts	1.35
Bran	1.20
Oil Cake Meal	2.50
Cocoanut Meal	1.40

Feed Stuff.

Selling price F. O. B. Los Angeles as follows:

Cracked Corn	1.50
Shorts	1.45
Bran	1.30
Egyptian Corn,	1.50
Rolled Barley	1.40

San Francisco Markets

SAN FRANCISCO, May 14, 1907.

Butter.

California, ex per lb	22
California, firsts	21
California, seconds	20
Packing Stock	19

Cheese.

Cal. Young American, fancy	14½
Cal. Flats, fancy	11½
Cal. Flats, firsts	11
Eastern, fancy	18

Eggs and Poultry.

Fresh Ranch Eggs	20
Eggs, first, per doz.	18½
Eggs, seconds,	15½
Eggs, thirds,	15
Hens, per doz	5.00@5.50
Hens, large	5.50@6.50
Young Roosters, large	7.00@8.00
Young Roosters, small	4.50@6.00
Old Roosters	5.00&6.00
Fryers, per doz	6.00@7.00
Broilers, per doz	3.50@5.00
Ducks, young	6.50@8.00
Geese, per pair,	2.00@2.25
Turkeys, per lb	16@19

Live Stock.

Steers. No. 1	9@9½
No. 1 Cows and Heifers	7@7½
Hogs, 80 to 130 lbs	8@8½
Hogs 250 to 350 lbs	7½
Calves, per lb	5@5½
Lambs, yearlings	6½@7

Potatoes

Salinas Burbanks, ctl	1.80@2.10
Oregon Burbanks	2.00@2.25
Rivers	1.85@2.10
New Potatoes	2½@3½

Vegetables.

Asparagus	6@12
Cucumbers, per doz	1.00@1.50
Chili Peppers, Green lb	12½@15
Green Peas, per lb	3@4½
Squash, crates,	1.25@1.60
Onions yellow per crate	2.00@2.50
Onions, new per box	60@75
Peppers, Green Bell	**25**
Rhubarb, per box	75@1.25
Tomatoes, Mexican	1.25@2.25

Citrus Fruits.

Lemons	75@2.00
Navels	1.25@2.75
Seedlings	**1.50**
Grapefruit, seedlings	**1.00@1.50**
Grapefruit, seedless	**2.00@3.00**
Limes	3.00

Fresh Fruits.

Apples, per box	1.50@2.50
Cherries, per box	1.25@1.75
Strawberries, crate	1.00@1.50
Apricots, crate	2.00@2.25
Cherries, blk	1.50@1.25
Cherries, white	1.00@1.25

Dried Fruits.

Apples (evap.)	**6@8½**
Apricots, per lb	**16@20**
Figs, white	4@5
Prunes	3@4½
Peaches	10@12½
Raisins, seeded (1906)	3½@10
Thompson, unbleached	7½
Thompson, bleached	9@11

Beans, Dried

Limas, No. 1	**4.15@4.25**
Pink	**2.40@2.60**
Large White	2.50@2.75
Small White	**2.95@3.05**
Black Eyes	5.00@5.25
Red Kidneys	**3.75**
Bayo	2.70@2.85

Hops.

Fancy, 12c; choice, 11½c; prime 10½@11c; common, 8@10c per lb.

Nuts.

Almonds new	**14@16**
Peanuts, Viginia	**6½**
Peanuts, California	**5½@6**
W lnuts	**15@16**

Honey

Clear White Comb	**16½**
Amber	**14@15**
Extracted	**5½@7**

Hay.

Alfala, local	**8.00@12.00**
Oat	16.00@20.00
Wheat. No 1	23.00@26.00
Wheat. No 2	14.00@18.00

Grain.

Wheat, No. 1	1.40@1.47½
Barley No. 1	1.21¼@1.23
Corn, small yellow	1.55@1.60
Corn, yellow	1.45@1.50
Oats, White	1.55@1.75
Oats, Red	1.60@1.75
Bran per ton	21.50@22.50
Straw, per bale	60@70
Feed Corn Meal, per ton	30.00@31.00
Cracked Corn, per ton	31.00@32.00
Oil Cake Meal, per ton	40.00@41.50
Cocoanut cake, per ton	27.00

Citrus Market

LOS ANGELES, May 15.—The past week has seen a slight weakening of the orange market. The two factors principally responsible are increasing decay and the large proportion of large sizes. The percentage of off large sizes becomes larger as the season advances. But there seems to be no fear but that the 2500 cars of navels yet to forward will command fair prices.

Of Valencias, seedlings and other varieties there are about 4500 cars. These promise good returns to their owners.

Lemons are not especially strong, as the cold weather of the East causes

light demand. On the contrary the warm Eastern weather of March caused a stiff demand at a time when there was no cars to move California lemons, with the consequent high prices which caused large importations from the Mediterranean. Of these there are now on the wharves of New York, over 150,000 boxes. Some good, hot Eastern weather will have a stimulating effect on the market, and soon clean up the surplus.

Shippments of citrus fruits to this date aggregate 18,727 of which 1800 were lemons. Same date last season 19,554, of which 2058 were lemons.

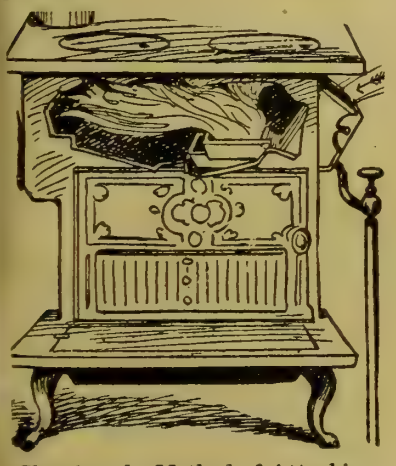
NEW YORK, May 10.—The market is depressed and lower on all grades and sizes. Weather turning warm. Thirty-three oranges sold today.

NAVELS—	Avg.
Victory xc C C U	$1.40

SECURITY GALL SALVE

POSITIVELY HEALS
SORE SHOULDERS
SORE NECKS OR BACKS ON
HORSES AND MULES
IT HEALS THEM ANYWAY
IN HARNESS, UNDER SADDLE OR IDLE
IF NOT SOLD IN YOUR TOWN WE WILL SEND YOU
FREE SAMPLE, if you send us the name of your dealer.
Put up in 25c, 50c and $1.00 Cans
MONEY BACK IF IT FAILS
SECURITY REMEDY CO.
MINNEAPOLIS MINN.
FOR BARB WIRE & ALL CUTS USE
SECURITY ANTISEPTIC HEALER

Hague Domestic Oil Burner



Showing the Method of Attaching to Cook Stove

A device for using low grade distillate Saves 40 per cent of cost of coal or city gas—let us prove it. Write for circular.

Hague Domestic Oil Burner Co.
214 Winston St. Los Angeles, Cal.

Vulcanite Roofing

Just the thing all the year around

Non-conductive of heat and cold. Does not buckle—lays perfectly smooth. A material which is at once light, strong, durable and cheap, and at the same time water-proof, wind-proof, acid and fume-proof. Also used for covering outsides of buildings, floors of warehouses, offices, etc. Requires no paint; is permanent and inexpensive.

Comes in various weights. Samples and price list upon application. Asphaltum and Roofing Materials of all kinds. C & S Roof Paint for sale.

C. SCHEERER & CO.
714-16-18 East 3rd Street
Los Angeles, Cal.

Weed Process COMB FOUNDATION
—AND—
BEEKEEPERS' SUPPLIES
Wax exchanged for foundation or bought for cash
H. J. Mercer
731 East Third St - Los Angeles, Cal.

BEST PILL ON EARTH

People who are sick with dyspepsia, headache and biliousness, having yellow complexion and pimples, do not want to experiment, but want a medicine that has had the test of time. We have cured these diseases for 25 years with DR. GUNN'S IMPROVED LIVER PILLS. They drive out the cause of sickness, making the complexion clear and healthy. 25cts. a box at druggists, or by mail. Write Dr. Bosanko Co., Philada., Pa. Sample Free.
ONLY ONE FOR A DOSE

Wildflower xc C C U	2.55
Peacock xc W & S	1.95
G Flower xc Red G O Assn	2.60
Golden Gate xc Red G O Assn	2.00
Sweetheart xf H G F Ex	3.10
Lincoln T I A H F Ex	3.30
Volunteer xc S A F Ex	2.15
Pride of Riv xf Riv F Ex	2.40
Quail xc O K F Ex	2.35
Homer fancy Q C F Ex	2.65
Squirrel fancy A H F Ex	2.45
Pointer xc A C G F Ex	1.70
Hunter standard A C G F Ex	1.90
Rose xf Red O G Assn	2.75
Clover xc Red O G Assn	2.25
Clover xc Red O G Assn	3.20
Queen Collins Fruit Company	2.40
Independent fancy Highland	3.20
Independent o r Highland	2.75
Old Mission fancy Chapman's	2.15
Golden Eagle standard Chapman's	1.95
Not named standard W D Ellis	2.25
Lion Head ex I L Lyon & Sons	3.45
SEEDLING—	
Victory xc C C U	1.50
El Toro C C U	1.35
Golden Orchard Independent	1.95
Cirterion o r Pen Fruit Company	2.40
Independent o r Highland	2.85
Rossmoyne o r E M Ross	2.00
LEMONS—	
Victory	2.35
SWEETS—	
El Toro	1.30
Broncho	3.10
Herald	2.25
Homer	2.45
Ca'el	2.20
ST. MICHAELS—	
Victory	2.15
BLOOD, HALVES—	
Rough Rider	1.70

CLEVELAND, May 10.—The market is firm on good stock, but weak on large sizes and on wasty fruit. Easier on lemons. Weather favorable. Seven cars sold.

BOSTON, May 10.—The market is very strong and weather favorable. Twenty-five cars sold and thirteen on tracks.

NAVELS—	Avg.
Alpha xf F Co	$3.25
Elk xc River F. Co	3.00
Crafton xf Crafton Or Gr Assn	3.25
Millcreek xc Crafton Or Gr Assn	2.85
Rose xf Redlands G O A	3.00
Clover xc Redland G O A	2.50
Cal Sun fy Orange Gr Cash A	2.50
Tourist st Spence Fruit Co	2.35
Rey fancy S T Ex Fernando	2.85
Tunnel ec S T Ex Fernando	2.90
Urchin st S T Ex Fernando	1.95
Quail xc O K Fruit Ex	2.30
Squirrel fancy A K Ex Prenda	2.25
Quail ec O K Fruit Ex	2.60
Eagle Head ef I L Lyon & Sons	2.85
Lighthouse standard C C U	2.70
Lilac choice C C U	2.60
Justrite st Q C Ex Corona	2.65
Floral ch S B Ex Colton	2.65
Jamison fy Q C Ex Corona	2.50
Golden Rule ec River X River	2.70

IOWA AGRICULTURAL COLLEGE GRADUATE GOES TO CANADIAN COLLEGE.

Mr. V. R. Gardner, Instructor in Horticulture, Iowa Agricultural College during the past two years, has just been elected to the position of Assistant Horticulturist at the McDonald Agricultural College, St. Anne de Bellevue, Quebec, Canada.

The McDonald College promises to be one of the very foremost institutions of its kind in the world, thus the position affords excellent opportunities for promotion.

The demand for well-trained men along horticultural and forestry lines is unusually strong. During the past three weeks the head of the Department has received inquiries from three different states and one foreign country, for men to fill very remunerative positions as instructors and investigators along horticultural lines. section.

A telegram from Boston, May 15, asserts that Benjamin I. Wheeler, President of the University of California, is to retire from that institution and accept the presidency of the Massachusetts Institute of Technology.

Lake Elsinore has risen 9 feet during the past season, which is higher than it has been for many years.

Imperial Valley's latest claim is to be headquarters for a great poultry shipping industry.

A horse thief at Calexico was shot and instantly killed by Fred Vaughn last week.

For a good, Practical Milking Machine see the O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

These Prices Win Orders
Read Them

Sugar—Part refined, a golden yellow, 100-lb. sacks, for canning fruit **$4.37**
(Call for Golden Granulated.)
English Breakfast Tea—A small lot of 20 chests, better than usual value; 10 lb. lots, or over, per lb. **.16**
Fruit Jams—Real fruit in wood pails, 5 lbs. net; till new fruit comes in; includes Marmalade and all kinds except the strawberries, each **1.00**
Baked Beans—The Farren Brand; quality is right; the 10-cent tins, all this month, doz. **.50**
Pirate Alarm Clocks—It's one of the best made, and guaranteed **.85**
Workman's Tar Soap—It is the best brand, 6 for 25c; 25 bars for **1.00**
Baking Powder—Pure, same as the best brand you know of in quality. Price saves you the advertising; 1 lb., 30c; 5-lb tin **$1.50**
Chocolate—Ghirardelli's Ground, 3-lb. tin **.75**
Spices—Buy a 5-lb. tin and have it handy; full weight, screw top; any kind except mace and nutmeg; tins **.88**
Cheese—California; is full Cream, 26 lbs., at **.15**
Crackers—The small wood boxes, crisp **.40**
Corn—Canned, good grade, dozen **.98**
Salt—A 50-lb. bag Dairy, for **.35**
Coffee—100-lb. bag Roast, splendid **.18**
Less quantity per lb. **.20**
25 lb. tins, or less, good, strong, ground, per lb **.15**

Camp Outfits Ready This Month.
Send for List of Combination Orders.

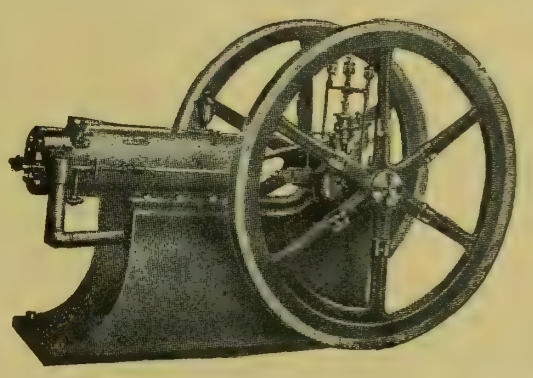
1907 a Boom Year

The business of this store is increasing by leaps and bounds. We sell a far greater volume monthly than ever before. This means, surely, but one thing—our prices are the lowest to be had on dependable, high-quality merchandise. We work a little harder and cheaper than any other store, wholesale or retail. The largest buyers in this market trade here. We can sell to you if we are not already—and to your profit. Come in and talk to us about it, if you can. Our free delivery service is improved and extended to Marin County and most all of Alameda County, wherever our teams and autos can run, besides San Francisco.

Our sales must reach a million this year, and add 20,000 more customers. Your name on a postal will obtain this list regularly.

There remains only $20,000 more now of our Special Bond Issue, so if you wish any, write by return mail. They provide a high return for use of money one, two, or five years, and make the best and safest investment in San Francisco to-day. Their sale has increased our net income ten times and helps us to serve you better.

Smiths' Cash Store, Co-Operative
14 to 24 Steuart St., San Francisco



Don't Experiment

With untried engines. Buy an engine with a ***guarantee*** of the ***lowest cost for fuel*** —the

White & Middleton

Absolutely reliable, tested and proved.

Wm. Gregory
602 No. Main St., Los Angeles, Cal.

WITH A SEIVERT OIL BURNER

You can burn 100,000 feet of air with every 120 gallons of oil, this means perfect combustion. To burn more than 100,000 cubic feet of air with 130 gallons of oil, there is a decided loss of heat. To burn less than 100,000 cubic feet of air there is a loss of fuel.
The only safe and reliable burner on the market.
Send for full particulars.

SIEVERT OIL BURNER CO. 1001 No. Alameda St., Cor. Main and Ord Sts., Los Angeles, Cal.

Your Eastern Trip

SOUTHERN PACIFIC

May be arranged so that you may travel by way of
New Orleans and the Sunset Route
San Francisco and the Ogden Route
Portland and the Shasta Route
Enjoying the balmy air of the South or the cool and bracing air of the North.

Personally conducted excursions every day from Los Angeles via all routes without change to principal eastern points.

City Ticket Office:
600 S. Spring St., cor. Sixth
Southern Pacific

Los Angeles-Pacific Co.
(Electric Lines)
Balloon Route

Take a trip over the popular route to the beach points—Santa Monica, Ocean Park, Venice, Playa del Rey, Shakespeare, Manhattan, Hermosa, and Redondo.

Passing through cities of artistic homes, mountain and valley scenery to delight the eye, fragrant orange groves and vineyards.

Skirting 14 miles of boundless sea; your choice of four routes to these points. 400 trains daily; 26 express daily except Sunday. Commutation tickets sold to all points.
For particulars inquire or write

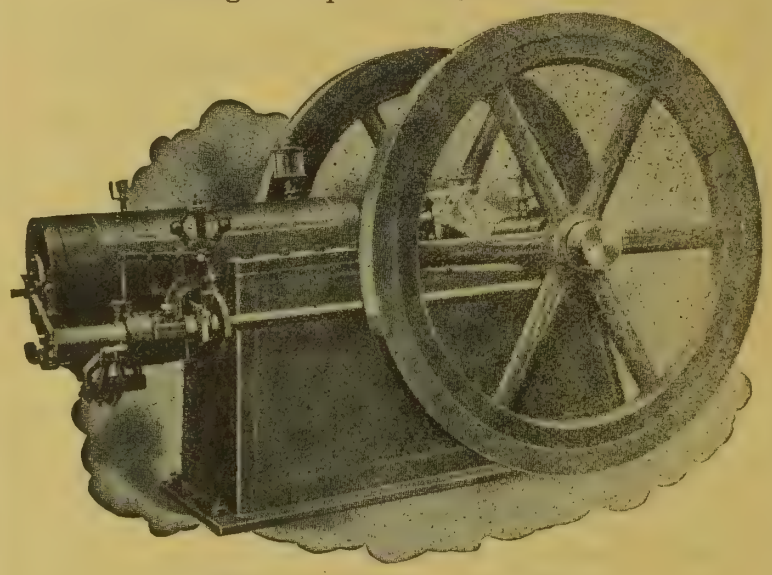
General Offices:
316 West Fourth St., Los Angeles
F. A. Short, Gen. Pas. Agt.

Columbus Engines

MADE BY

Columbus Machine Co., Columbus, Ohio

Have stood the test sixteen years.
The largest output in the United States



Standard Horizontal, 4 to 60 H.P.

Read what this man says about Columbus Engines:

Greenleaf-Compton Company, Tropico, Cal., 4-3-07.
121 So. Los Angeles St., Los Angeles, Cal.

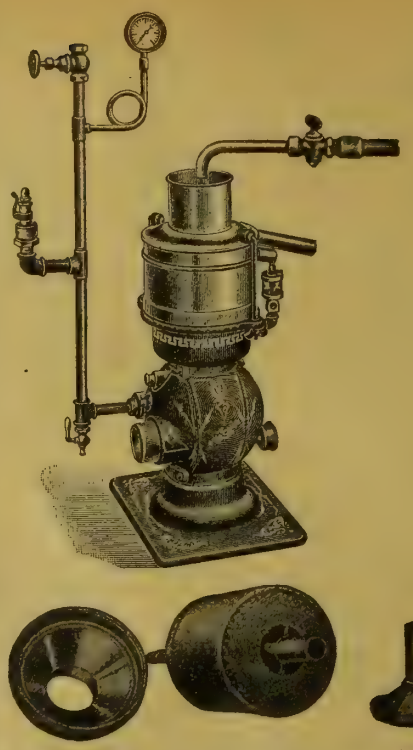
Gentlemen—For about four years, I have used a Columbus engine of ten (10) horse power; which has been running a 3½ Vertical pump and pumping about 35 inches water with a 90 foot lift, and when the time came to buy a new pumping plant for my ranch near Anaheim where we we shall need water for about 200 acres, I decided to have a 60-horse Columbus engine installed, and placed the order with you because I expect to have a pumping plant that cannot be excelled.

Respectfully, E. B. BARY.

This 10-horse engine is pulling 13½ horse power. We are installing a 60-horse plant for Mr. Bary, 3½ miles north of Anaheim. Come in and let us demonstrate the simplicity of Columbus Engines.

Greenleaf-Compton Co.

121 So. Los Angeles St. **Los Angeles, Cal**



LET THE

Simplex Separator

Do Your Skimming

GUARANTEED CAPACITY
LIGHTEST RUNNING
CLOSEST SKIMMING
EASIEST CLEANED
MOST DURABLE

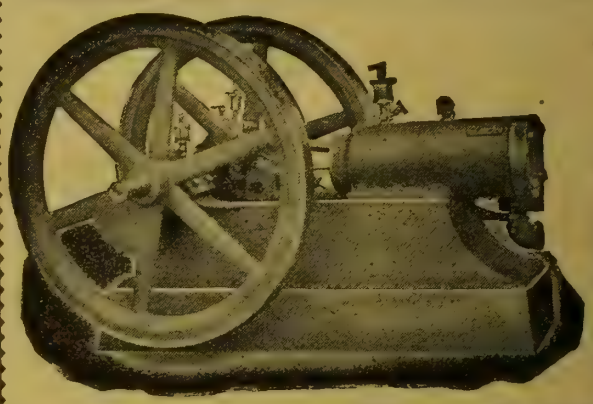
The Largest Capacity for the Money of Any Separator on the Market. Hand and Power Sizes

Everything for Creamery, Dairy and Cheese Factory. Write for Our New Price List S.

Baker & Hamilton

San Francisco
Los Angeles
Sacramento

Samson Gasoline and Distillate Engines



Are Strong and Durable

Fully Guaranteed in every particular

We make complete Irrigation Outfits

Samson Centrifugal Pumps Are the Best.

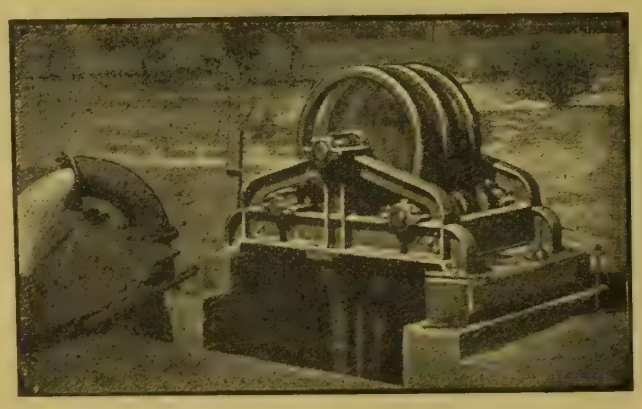
Enlargement of our factory makes it possible for us to make prompt delivery.

Send for our new catalogue and estimates.

Samson Iron Works

Office and Factory, 1100 to 1198 Aurora St., Stockton, Cal.
Branch: 920 J St., Fresno 553 S. Los Angeles St. Los Angeles

Addison Double Plunger Pump Head



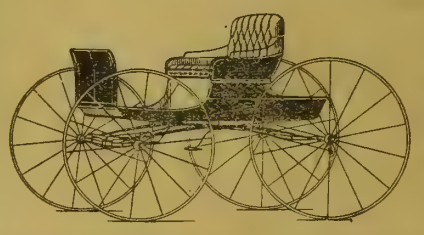
It will pay you to investigate the Addison before purchasing a pump. Send for Catalogue B.

Addison Pump Company

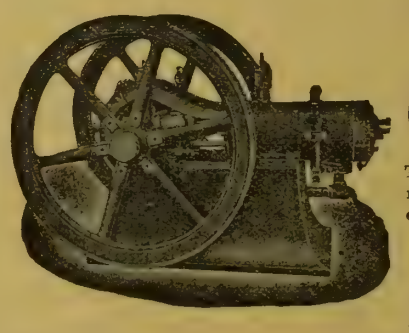
Phones: Home 91; Sunset, Black 1551 Cor. 1st and Cypress Sts., Pomona, Cal.

Campbell Brothers Stockton, Cal.

534 to 538 East Main Street



Our New Spring Catalogue offering 25 Special Bargains is now ready. It will save you money. Send for a copy today.



The Callahan Oil Engines

The Highest Grade Made. Won First Prizes at Sacramento and Porterville Fairs. Large stock always on hand. Send for Pump and Engine Catalogues.

G. W. Price Pump Co.

21-31 Jessie St., San Francisco

Branches—Sacramento, Visalia, Porterville

STEARNS GASOLINE OR DISTILLATE ENGINE

Has many points superior to any other engine.

Hundreds In Use
Every One Satisfactory

Built for California cheap fuel.
For further information, write

STEARNS GAS ENGINE WORKS

1001-3-5 North Main St. **Los Angeles, California**

STABLE MANURE

Special Prices for Immediate Orders, APRIL and MAY Delivery.

Direct Agents Swift and Company's Fertilizers

DIAMOND COAL COMPANY
FERITLIZER DEPARTMENT

Direct Agents Swift and Company's Fertilizers

631 Chamber of Commerce Bldg Phones Ex. 315 LOS ANCELES, CAL.

500,000 FEET OF WATER PIPE

All sizes, Galvanized and Black, slightly damaged.
Special Price While It Lasts. Phone or write.
ADAMS PIPE CO., 603 Grant Bldg., Los Angeles, Cal. Phones: Main 1917, Home 1917

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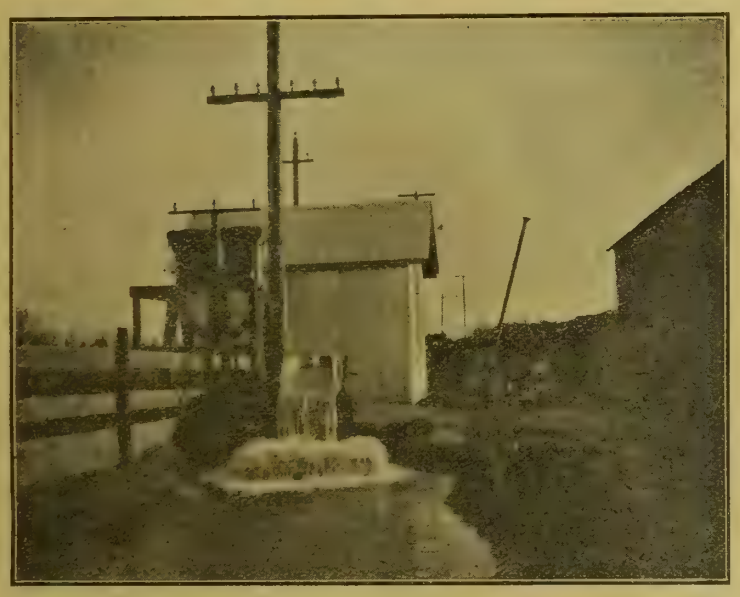
DON'T BUY GASOLINE ENGINES

UNTIL YOU INVESTIGATE "THE MASTER WORKMAN," a two-cylinder gasoline, kerosene or alcohol engine, superior to any one-cylinder engine; revolutionizing power. Its weight and bulk are half that of single cylinder engines, with greater durability. Costs Less to Buy—Less to Run. Quickly, easily started. Vibration practically overcome. Cheaply mounted on any wagon. It is a combination portable, stationary or traction engine. SEND FOR CATALOGUE. **THE TEMPLE PUMP CO., Mfrs., Meagher and 15th Sts., Chicago.** THIS IS OUR FIFTY-THIRD YEAR.

California Cultivator

Los Angeles May 23 1907 San Francisco

Irrigating Scenes Near City of Visalia



Pumping Plant near Visalia

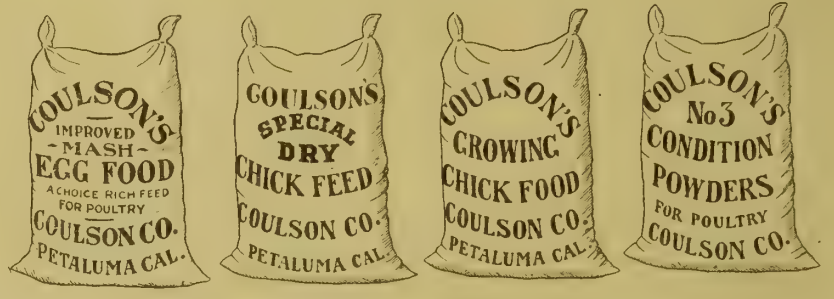
Irrigating a Delano Orange Grove

TULARE COUNTY, California, is one of the largest counties of the great San Joaquin Valley—a valley that is an empire in itself . Commencing where the Sacramento and San Joaquin Rivers join to empty their waters into San Francisco Bay, and extending from the Sierra Nevada Mountains on the east to the Coast Range on the west, embracing a territory from 75 to 100 miles in width, the valley sweeps southward 250 miles, to where the Tehachapi mountains intersect with the Sierra and Coast Ranges, forming the line between so-called Northern and Southern California.

Tulare County lies just half way between San Francisco and Los Angeles, and has an area of 4935 square miles, or 3,158,400 acres. The history of Tulare county is the history of Visalia, as, in the early days, all of interest centered about the only town or emanated from it. But Visalia has had an individual progress independent of the county history; in the maintenance of schools, the organization of its churches, the formation of its lodges and fraternities, its banks, municipal organization and civic affairs. In the fifty years of its existence it has come to be one of the most thriving and prosperous cities of the valley, of great natural wealth. the possibilities of which are yet being developed.

Coulson's Mixed Poultry Foods

Are Better Than Ever



The Coulson Company's Standard Brands of Poultry Food

Feed your chicks on

Coulson's Special Chick Food

for the first six weeks or so, till they are well feathered, strong and active. Then keep up their continuous and rapid growth by feeding

Coulson's Growing Chick Food

up to three months old, when the pullets can be fed

Coulson's Improved Mash Egg Food

This will insure you healthy stock and plenty of eggs. At this time of the year a little of

Coulson's No. 3 Condition Powders

are most beneficial for keeping the hens healthy, after the laying season, and for getting all eggs possible before they begin molting.

Coulson Poultry & Stock Food Co.

Petaluma, California

Germain Seed Co., Los Angeles, Distributing Agents for Southern California

Lice Kill the Chicks

That sleepy-acting chick is infested with lice. Act promptly or you will lose the whole brood. Dust each chick with a very little Instant Louse Killer, and dust the hen **thoroughly.** When you next set a hen, do not fail to dust both hen and nest with this wonderful insecticide.

Instant Louse Killer

is sure death to lice on poultry, horses, cattle, ticks on sheep, bugs on cucumber, squash and melon vines, cabbage worms, slugs on rose bushes, etc; and is also a reliable disinfectant and deodorizer. Comes in convenient shaker-top cans and being a powder may be used winter or summer with equal convenience. **Sold on a positive written guarantee.** Be sure to look for the word "Instant" on can as there are many imitators.

1 lb. 35 cts. 3 lbs. 85 cts.

If your dealer cannot supply you, send your order to us.

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THE PETALUMA INCUBATOR CO.,
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1907 LOS ANGELES 1907

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Ross & Tate, Altadena, California
Breeders and Importers of
Buff, Black, and White Orpingtons
Have for sale Trios, Cockerels and Pullets. Eggs for hatching, settings or hundreds. Write or call,
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EXCLUSIVELY
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H. G. Spargur, Soquel, Cal.

***Baldwin's* White Leghorns**

Egg prices cut in two for May and June. Fine youngsters at reasonable rates. Good older stock cheap to make room. Send for latest price list.

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WHITE WYANDOTTES **Hubbard Stock**
heavy-laying prize-winning strain. Eggs $2 for 15; Baby Chicks 20c each. ***Cannon Poultry Co.***
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Take Slauson Ave. car to 29th St., walk 1 block west

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Imported and Domestic Matings Now Ready. Surplus Stock All Sold. Let us book your order at once for future delivery. **L. L. Viereck, Pres**
Ancona Club of America, **Albany, Oregon.**

California Cultivator

Vol. XXVIII—No. 21 Los Angeles, California, Thursday, May 23, 1907 Subscription $1 a year

Two Varieties of Grasshoppers

Hoppers Which Have an Appetite for Alfalfa, but Will Eat Old Leather if They Have It

Suggestions How to Control Them

THE depredation of the grasshopper has been the burden of many a letter to the Cultivator. "What can I use to poison them," "They are destroying all our crops, what will keep them off?" and other pertinent questions are constant in coming in.

The answer is not so easy, or more correctly, an answer which will suggest a method both effective and economical. At best there must be co-operation, and the isolated farmer with great expanse of uncultured lands about him is almost helpless to control the pest.

However, we have some good suggestions from an article by F. M. Webster, of the U. S. Department of Agriculture. The article applies more particularly to the alfalfa pest, but will be of value in working with any of the hoppers.

Description of Two Species.

The differential grasshopper (fig. 1) is about 1½ inches long, its wings expand about 2½ inches, and it is of a general bright yellowish-

FIG. 1.—Differential grasshopper (Melanoplus differentialis). Natural size (after Riley).
Webster, Circular 84, Div. Entomology, U. S. Dept. Agriculture

FIG. 2.—Two striped grasshopper (Melanoplus bivittatus). Natural size (after Riley).
Webster, Circular 84, Div. Entomology, U. S. Dept. Agriculture

green color. There is, however, a nearly black melanic form that does not seem to differ otherwise from the normal. The head and thorax are olive-brown, and the front wings are of very much the same color, without other markings but with a brownish shade at the base; the hind wings are tinged with green; the hind thighs are bright yellow, espesially below, with four black marks; the hind shanks are yellow, with black spines and a ring of the same color near the base.

The two-striped grasshopper (fig 2) varies in color from a dull green to a dull brown, with a distinct yellow stripe extending on each side from the upper part of the eye to the end of the wing. The male is about 1¼ inches long and the female about one-fourth of an inch longer. This grasshopper may be so easily recognized from the accompanying figure that further description is unneseccary.

Life Histories and Habits.

The eggs are desposited in the ground in masses, inclosed in more or less kidney-shaped pods, in late summer and fall, after the manner shown in figure 4, which illustrates the oviposition of the Rocky Mountain grasshopper or locust. The females seem to prefer a moderately compact, rather damp but not wet soil which is rarely disturbed by the plow or other cultivating implement. It will thus be seen that alfalfa fields throughout the irrigated sections constitute an ideal breeding ground. Winter is passed in the egg state, the young hatching in spring and reaching maturity in summer, and there is but one annual generation. Neither of the two species is migratory. Their flight is rather clumsy, and they do not remain long on the wing before alighting.

Preventive and Remedial Measures.

Preventive measures, as here restricted, apply to a period antedating the hatching of the young; while remedial measures are such as deal with

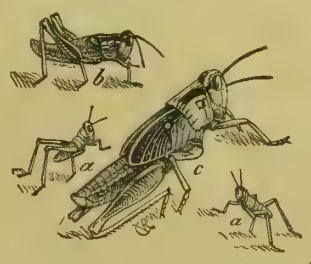

FIG. 3.—Rocky Mountain grasshopper or locust (Melanoplus spretus): a, a, newly hatched larvae; b, full-grown larva; c, pupa. Natural size (after Riley).
Webster, Circular 84, Div. Entomology, U. S. Dept. Agricul$ure

tne insects after hatching and with methods of destroying them.

While many modes of procedure have been advocated, tending to ward off impending atacks, and perhaps even a greater number of devices constructed and mixtures compounded for the destruction of grasshoppers, we will here consider only such as are readily and cheaply obtainable by the farmer and ranchman and those most practical in application.

Destroying the Eggs.

Destroying the eggs of the grasshoppers seems to be the only preventive measure that promises to be worth while atempting, except, perhaps, the destruction of the young as they are hatching. Destruction of the eggs may be accomplished by either plowing, harrowing, disking, or cultivating, in the fall or winter, all roadsides, ditch banks, margins of cultivated fields, uncultivated fields, and grassy margins along fences. In short, all waste lands that it is possible to reach in this manner should receive attention, unless it is known that no eggs were desposited there.

The soil need not be stirred deeply, two inches being a sufficient depth to accomplish the desired effect; and circumstances will probably dictate the kind of tool or tools that a farmer ought to use and where to use them. There is no doubt whatever that if this measure were put into operation at the proper time, in whatever manner is most practicable, disastrous outbreaks the following spring would be forestalled and prevented. Except in cases of isolated farms or ranches, there should by all means be concerted action in this movement.

Where fields can be quickly inundated and the water promptly run off, as is frequently done in rice fields, the young grasshoppers may be killed by flooding the field for a day or two just as the eggs are hatching. If close watch is kept to de-

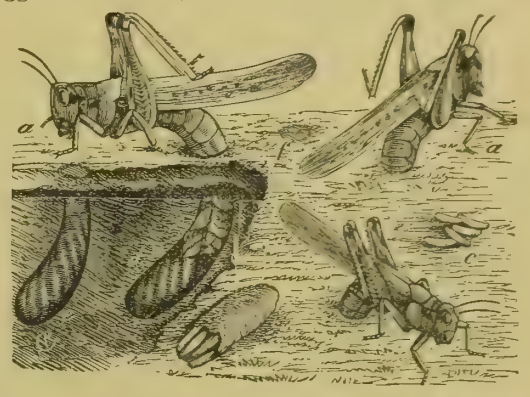

FIG. 4.—Rocky Mountain grasshopper or locust (Melanoplus spretus): a, a, a, female in different positions, ovipositing; b, egg-pod extracted from ground, with the end broken open; c, a few eggs lying loose on the ground; d, e show the earth partially removed, to illustrate au egg mass already in place and noe being placed; f shows where such a mass has been covered up. (After Riley).
Webster, Circular 84, Div. Entomology, U. S. Dept. Agriculture

termine just when the young grasshoppers are hatching, and prompt action taken at this time, much good can be accomplished; but as soon as the young begin to move about, flooding will avail but little, as the grasshoppers will climb to the upper part of vegetation beyond the reach of the water.

Destroying the insects.

Under this head will be discussed those measures which should be resorted to when the grasshoppers, having hatched from the egg, are threatening alfalfa fields from within or without, or both.

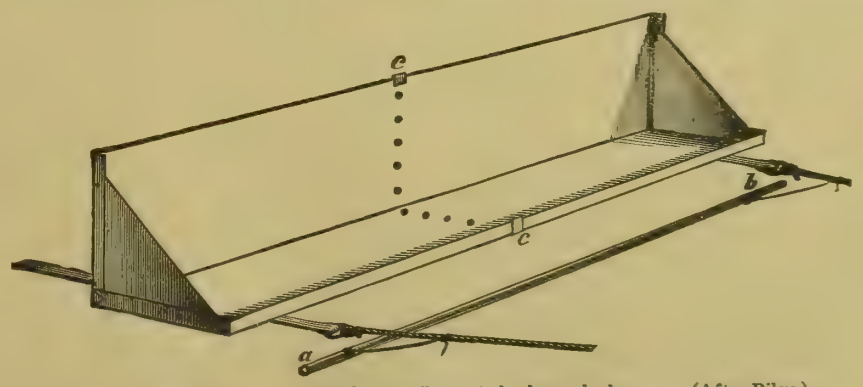

FIG. 8.—"Hopperdozer." A simple coal-oil pan, to be drawn by horse. (After Riley.)
Webster, Circular 84, Div. Entomology, U. S. Dept. Agriculture

The Hopperdozer.

On level or comparatively level land this implement can be used to good advantage in collecting grasshoppers of all ages—from the youngest to the adults. There are many modifications in the construction of these hopperdozers, but the form here described and figured, the writer has had made for him, and he has employed it in the fields and knows from experience that its use is

Concluded on Page 548

Sanders-Arnott
Orchard Disc Plows

Forty-five of these plows have been sold by one agent at Riverside this season.

Used and endorsed by Arlington Heights Fruit Co., Riverside, Cal.; Chase Nursery Co., Riverside, Cal., and hundreds of other prominent orchardists throughout Southern California.

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A Fine Stock of Superlative Raspberry, also Fruit Trees and Vines of All Sorts. Both Phones.
P. S.—See Article in Cultivator on Page 550, issue of December 6th.

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Deciduous Fruit Culture

By J. W. MILLS

MOTH CATCHERS.

THERE is still a lingering suspicion among many apple growers, that the lantern in an oil filled basin, is a feasible way to catch the codling moth.

This is a question that has been settled by careful tests in all parts of the country for several years. There are, However, many growers who cling to the idea that the lantern trap is profitable to use. Any person who is interested and will visit the office of the Horticultural Commissioners, will see an exhibit of a collection of insects caught in a lantern trap. There are nearly 100 insects, mostly moths, only one of them being a codling moth.

The Cornell, New York Station issued a bulletin in 1902, in which are given the reasons why the trap is a failure. It says that most of the grasshoppers, many of the true bugs, like the squash bug, all the butterflies, many of the moths, the peach tree borer moth, many beetles and most of the flies are day fliers and are not attracted by a light. A lantern trap may easily catch ten or twenty thousand insects in a season, but most of the household pests and fruit and garden pests are not attracted. Only about ten per cent of the injurious kinds are the females and they have almost invariably laid their eggs. About as many friends as foes are among the beetles are caught.

A strict account kept in Canada showed that one-third of the insects caught in this way were beneficial. In New York the number of injurious and beneficial insects was about equal. It must be borne in mind that the injurious insects do not destroy any of the beneficial kinds but one of the latter will kill many of the injurious kind. It will be seen from this, that it is not the number that is caught, but the kinds that are caught.

The potato worm moth is attracted by light at night, but the light must be used at a certain period or it will be of little use.

The geographical distribution of insects has been brought out in an interesting manner by the experiments with lantern traps. At the Canada Station one lantern trap was run three months and caught 2000 insects. The New York Station ran one four months and caught 13,000 insects representing 350 species. A lantern trap in a Texas cotton field caught in one night nearly 13,000 insects. It would be interesting to know how many might be caught in Central America in one night.

SPRAYING FOR CODLING MOTH.

The knowledge that spraying with arsenic solutions will reduce the injury done by codling moths greatly, is of little use unless the life history of the moth and worm is known. It commences in the spring from the larva or worm which has lain in the cocoon all winter. This worm pupates or goes into the chrysalis form when spring weather comes and in a few days comes out as a moth. It then flies about during the day time and lays its eggs on the apples just out of bloom and also on the leaves of the tree. The moth is active about four days; the eggs require about ten days to hatch and the worms live about 20 days before they spin their cocoons.

Now this will give an idea when to spray. As Prof. Melander of the Washington Station says: "The object of spraying is to coat the food of the worm with poison, so that its first meal will also be its last." He suggests that the best way to determine the time to spray, is to put a few cocoons in a Mason jar, with a cloth cover on it, and watch when the moths hatch out, about a week after this period spray. This will come about two weeks after the blossoms fall. By that time the blossom end of the apples closes in and the poison cannot be made to enter it. Moth eggs will be laid there and wormy apples will be the result unless the spraying is done just after the blossoms fall. In about two weeks the worms hatch and the spray material has lost some of its effiency through the expansion of the apple and the action of the elements. Consequently, the trees should be sprayed again at this time It is useless to spray from this time on till the next crop of worms appears. The time can easily be determined by placing some of the first found cocoons in the jar and watching them hatch. As soon as they first hatch, spray again and one week later spray again. A last spraying may be done in September if many wormy apples are found. Any sprayings between these specified periods is time and material wasted.

WALNUT GROWERS' INSTITUTE.

J. B. Neff, in charge of Southern California Institutes, announces an important meeting at Whittier on Wednesday and Thursday, June 5-6. It is called in the interest of walnut growers, and walnut growers from all over the State are expected. Prof. Wickson and Prof. Smith of the University and Judge Lieb of San Jose will be present and address the institute, as will many local growers.

The program is:

WEDNESDAY, JUNE 5.

10:00 a. m.—Introductory, Dr. J. A. Osmun.

Definite Methods of Fertilizing: Thomas Gooch, Rivera; R. McNees, Whittier; H. E. Collins, Rivera.

1.30 p. m.—

The Practical Value of Scientific Work in Prevention of Plant Diseases, as illustrated by Experiment Station Records: Prof. E. J. Wickson.

Important Facts to be Ascertained in the Investigation of the Walnut Industry: F. E. Kellogg, Goleta; C. C. Teague, Santa Paula; R. H. Sanborn, Santa Ana.

Irrigation and Cultivation of Walnuts: P. F. Coggswell, El Monte; B. F. Porter, Fullerton; C. G. Sanderson, Whittier.

7:30 p. m.—Question Box.

Pathological Laboratory: C. C. Chapman, Fullerton; E. G. Ware, Garden Grove.

The relation of the University to the Pathological Laboratory, and to the walnut grower: Prof. E. J. Wickson, Berkeley; Capt. G. L. Smith, Carpenteria.

THURSDAY, JUNE 6.

9:30 a. m.—Question Box.

The Possibilities of Improvement in Walnuts: Prof. E. J. Wickson, Berkeley; L. B. Hogue, Santa Paula.

Experiment work in Progress, and Proposed by the Pathological Laboratory: Prof. R. E. Smith, Whittier.

1:30 p. m.—Question Box.

Hay Tools

Deering Ideal Mower
5 and 6 foot

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All sizes

Dain Buck Rakes
Regular or Alfalfa

Dain Junior Stackers
Mounted

Southwick Hay Presses
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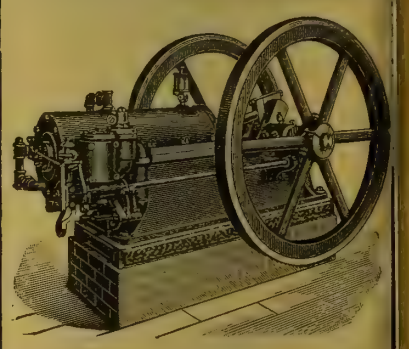

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Of pumping water for ***Irrigation*** can be greatly reduced by selecting the ***Right*** Power and Pump.
We have acquired valuable information in installing thousands of
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The Cost of a Pumping Plant is not so important as the cost of pumping the water after you have the plant.
We have no "hobby." We sell all kinds of Pumps and Powers. It is a pleasure to sell you an economical plant. Come in and talk it over.
Cut out this advertisement and bring it with you. It is good for one of our handsome Combination Thermometers and Barometers.
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PUMPS FOR EVERY SERVICE
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A big success, with a jolly time for all who participated, is claimed for the picnic of the Roseville Grange, held recently at Sylvan Grove.

Can old Walnut Orchards be Made Resistant by Top grafting? If so, How Can it be Done: Ralph McNees, R vera; Mr. Crane, Saticoy.

The Walnut Industry: Judge S. F. Leib, San Jose.

AGRICULTURE IN OUR INDUSTRIES.

In an address delivered recently at Pittsburgh, Secretary James Wilson spoke of the growth of scientific farming in the semi-arid sections of the west, and, in the course of his address, declared, "the time is not far distant when the semi-arid sections of the west will feed the nation independent of irrigation." In the course of his lengthy address replete with interesting matter the Secretary spoke of the results achieved in desert farming as follows: "After years of laborious exploration by government scientists, the methods of the people in Africa and Asia, who have learned to farm where the rainfall is light, have been adapted to the dry regions of the American continent from Texas to the Dakotas. Wheat imported six years ago yielded over 50,000,000 bushels last year, and this increase will grow in magnitude of yield, and spread of area, until the semi-arid country west of the ninety-ninth meridan will eventually produce most of the bread of the United States independent of irrigation."

Again, referring to the class of men engaged in agriculture at the present time, Mr. Wilson said:

"The most successful farming in our day is carried on by men of highest intelligence regarding all that pertains to the soil, the plant, the animal and the market. The American producer from the field would not be the potent factor he is without the inventor to perfect his machinery and the carrier who transports long distances at low rates; nor would he play the part he does in the world's markets with poorer soils and less genial climates.

"A vigorous movement by Federal and State agencies is in progress to educate the young people of the farm and to make research into the wide field of science that pertains to producing the nation's food, clothing and other necessities. Discussion has been active for a generation or more regarding the preparation of the farmer for his life work. Many educators think the farmer needs nothing beyond a common school education. Many legislators think that money devoted to training farm people is wasted. The Federal government has voted lands and money to educate the children of the farmer and the mechanic has endowed institutions to make research. The States have followed the lead of the Congress, and something is being done in each of them, much is being done in some of them to teach the sciences of agriculture. The movement among those interested is so strong that the old-fashioned educator and the hostile legislator are getting into the minority.

"As agriculture develops and becomes systematized the relations between the farmer and the man in the city will become more intimate. Thousands of tons of produce are grown which must be handled quickly, sent into our city markets, and disposed of. Thus have developed the great problems connected with transportation, storage, and the general handling of perishable products, such as fruits, vegetables, etc.

"On the Pacific Coast 30,000 carloads of oranges are produced every year, and most of these must be sent across the continent to be distributed in our eastern markets. Hundreds and thousands of carloads of these fruits are destroyed through improper handling, and hundreds and thousands of carloads of other perishable fruits, such as peaches and apples, are similarly lost through bad methods of handling.

"The department is studying these questions and pointing out to the grower how he may so improve his methods as to prevent his losses; pointing out to the packer how he may handle the fruit and perishable products so as to help the grower; and pointing out to the transportation companies how they may conduct their business to the end of placing the goods in the hands of the consumer in good condition.

"Besides this, the department is pushing investigations with the view of placing these choice fruits across the water in the markets of our European neighbors. Special methods must be devised for handling and shipping these long distances. We have shown how peaches may be shipped and placed on the Liverpool and London markets as fresh as when they were taken from the trees. Such fruits have yielded handsome profits and open the way for the clearing of our markets in times of overproduction."

TO MAKE KEROSENE EMULSION.

Dissolve a half pound of hard soap in a gallon of hot water and then, away from fire, add two gallons of kerosene. Churn the mixture briskly for five minutes or more until the whole mass has a uniform creamy consistency. This may be readily done with a bucket pump by taking the noozle from the hose and pumping the stream back into the mixture. Then dilute with fifteen to twenty gallons of water.

The above has been given often in the Cultivator and is still called for by many subscribers. Cut it out and paste in your scrapbook.

Above all things, plan your work. "Foresight is better than hindsight" in farming as much as in anything else. Have the hired men understand what they are to do to-morrow as well as to-day. A careful planner is generally, to use a back East expression, "forehanded."

If it can possibly be managed, don't borrow other people's implements. Sometimes, however, this is unavoidable, and in such a case return the borrowed articles promptly, and in as good or better condition than when received—then it will be an easy thing to get it again when needed.

Try and establish a farmer's club or a Grange in your neighborhood. Invite the neighbors to meet and discuss subjects of mutual interest. It will be suprising the benefits derived from these neighborhood meetings.

How much more attractive fruit looks when placed on sale if a few fresh leaves are placed among it. We are of course alluding to local trade.

"Do let me have the lounge, my son; my discourse was unusually long, and I am very tired."

"But, dad, I listened to it."

The Little Red School House

IS FOUND in the rich farming country of Alberta, Canada, just the same as it is found on the prairies of the central or eastern states.

In fact, facilities for educating your children are just as good in Alberta as they are in any section of the United States.

Western Canada is keeping abreast of the times, and in the matter of making money from agricultural pursuits it is ahead of any other country on earth.

Live stock and crops can be produced cheaper there, and in larger quantities, than in any other part of the world.

The rich grasses to be found on the plains of Southern Alberta produce better and fatter live stock than any other grasses known, and with the addition of a little water almost any kind of grain or vegetable can be raised.

In order to suppy the necessary moisture a large irrigation project is now under way which will supply water to the very richest portion of this great Canadian province.

The Canadian Pacific Railway Co. is building a vast system of ditches, which, when completed, will water about 1,500,000 acres of this rich land.

Land under this system of ditches is being offered at prices so low any man with a small amount of money can find a home there with the assurance that with one or two crops the land will be paid for.

On the vast irrigated tracts of Southern Alberta you can find a farm that will just suit you, and you can rest assured that if you farm it fifty years you will never have a crop failure.

Full information and particulars how to see the land, terms of sale and prices will be sent upon application to

Canadian Pacific Irrigation Colonization Company, Limited,

60 Ninth Avenue, West, CALGARY, ALTA., CANADA.

Sales Department, Canadian Pacific Railway, Irrigated Lands. 4

Iron Age Garden Tools

Every market gardener knows that a Wheel Hoe is a labor saver

The "Iron Age" tools are the strongest, lightest and best.
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Quality is the first consideration in our factory, every detail from the raw material to the finished article is carefully considered and nothing but the best enters into the makeup of our

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We make every style of harness, from the finest exhibition outfit for the show ring to the

HEAVY TRUCK HARNESS

HAND TRADE MARK BRAND

Insist on the **"hand brand"** on your horse furnishings.

If Your Dealer Can't Supply You, Write Us, Sending His Name

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NEW CENTURY HAY PRESSES

NEW CENTURY
FULL POWER NO PLUNGER TO BREAK.
7-inch Step-Over.
Tying chamber 18 inches off ground.
Stands up to its work, no taking off wheels.

STRONGEST PRESS ON EARTH. ALL IRON AND STEEL.

Constructed especially for heavy California hay baling. Write for proposition to ship you a New Century on ***10 Days Free Trial.*** Sold on easy payments. Shipped direct from warehouse in Los Angeles. For full particulars address ***Capito Carriage Co., 12th and Main, Los Angeles, Cal.***

Two Second-Hand Presses For Sale at a Bargain

Sugar Beet Pulp
(Kow-Sauer-Kraut) For Cows

Q. What is a cow?
Ans. She is a square critter, with a peg at each corner to stand on.

The Cow Talks: I have also been called a "milk-machine." To a nail-machine they feed wire and get nails. So they expect to feed me wire-y, dusty, musty hay and get milk. Nothing in it. Don't expect to get wire nails from a nail-machine without feeding it wire, nor milk from this milk-machine when fed on wire-y hay mostly trodden under my feet.

I'll tell you what to feed me—give me Kow-Sauer-Kraut when I come in from the pasture.

Kow-Mathematics: Then I'll give you 32c worth of milk for a cent's worth of pulp. Besides, I figure I'll get fat at the rate of about a pound a day. (MRS.) A. LEAN COW.

P. S. You can get cured Kow-Sauer-Kraut at $1.00 per ton from the silo of the

Los Alamitos Sugar Co., Los Alamitos, Cal.

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Live Stock and Dairy

By Mrs. Minna E. Sherman, Fresno, Cal.

CONDIMENT FOODS AND CONDITION POWDERS.

MANY of the sicknesses that trouble horses and cows are those produced by unnatural conditions of life. They are heavily fed and when they take cold, inflamation starts at once, the animal stops eating for a few days to rest the stomach, for this is Nature's way of curing these troubles. The tendency of the owner is to rush to condition powders or condimental foods. The most of people do the same thing with their own stomachs, they at once begin to have special dishes cooked or take to whiskey whenever the stomach rebels against its overload. A little resting does great good; even if the trouble is serious, it is better to have the stomach free from a mass of undigested food.

Evil Effects.

The results sometimes obtained from feeding condiment foods are undesirable because used wrongly. We feed alfalfa with water for breakfast, then water and alfalfa for dinner, then alfalfa and water for supper, until the cows sigh wearily over the task of converting the same things day after day into milk. Give them a little of one of the condiment feeds and see how they will enjoy it. Try them also with a little common mill stuff, and see how they will enjoy that. Then count the difference in the cost between the two and see how you will enjoy it! The complete change is to the cow was grateful as it would be to a person. Often a little sweetness added will help the cows. A handful of raisins or figs will be received with pleasure. Molasses is also enjoyed by all stock and if it is cheap enough, the horses and cows can have their grain moistened with a pint of it at each meal for a change. A pint has to be the limit at first or the animal may be purged. A horse can be quickly put into show condition by feeding barley boiled and sweetened with molasses.

Salt.

A cow in milking requires to balance up the excreta, nearly two ounces of salt a day, while a horse uses less than an ounce and a half. In the East this salt has to be supplied, so that all the condiment foods are heavily salted. Here in California there are herds of cows that never receive a bit of salt. The owners have found that the cows reject it, as there is salt enough in the ground for all their requirements. We always keep salt where the horses and cows can have it and let them help themselves. They eat but little of it. I do not believe it would be wise to force the salt on them, while it might not be injurious. It is certainly far from pleasant for any one of us to have to eat more salt than we like, and then have to drink an extra amount of water to carry it out of the system.

May be Advantageous.

After all is said against the use of condition foods and powders, a little condiment food can be used at times with advantage by every dairyman, yet he can mix it himself. The drugs used are aromatic seeds, with such vegetable tonics as gentain, Virginia snake root, cascarilla with salpetre and sulpher added, sometimes copperas is used. These are only used in small quantities, and the bulk of the feed is linseed meal, cotton seed meal, corn meal, shorts, bran or cheap flour in the good honest brands.

A Formula.

The following quantity will make one ton of excellent stock food. At the time it was made we were growing beans on the ranch:

Linseed meal 800 pounds, ground beans 925 pounds, Indian meal 433 pounds, powdered tumeric 30 pounds, powdered ginger 3 pounds @ .09, 27 cents; powdered Fenugreek, 2 pounds, @ .25, 50 cents; powdered Coriander seed, 2 pounds, @ .05, 10 cents; powdered Gentain, 10 pounds, @ .045, 45 cents; cream of tartar, 20 pounds, @ .30, $6.00; flour of sulphur, 10 pounds, @ .02, 20 cents; salt, 5 pounds, @ .01, 5 cents.

The total for drugs and aromatics $7.12. While the prices may be a little higher than when I purchased last year still they are not very far out. The recipe for this food is one of the best that is now on the market and sells for twenty-five cents a package or at the rate of $500.00 a ton.

Use in the Proper Way.

The ranch mixture is used in bringing up any thin cow to proper condition or flesh, when the cow is once in fair order stop the use of the drugs and put the cow on a little plain oil cake, for the digestion may be injured if unduly forced.

The old idea that the cows' stomachs were burnt out if they were fed any grain has a foundation in the fact that show cattle are over fed and dosed to hold them up under the fatigues of the show ring. These cows often go off condition badly and have to be turned on the grass until they recover.

The Formula for Bloating Cows.

Linseed meal 100 pounds, sugar 20 pounds, corn meal 200 pounds, ground gentain 2 pounds, sulphur 4 pounds, ginger 1 pound; caraway seed ½ pound, anise seed ½ pound, bicarbonate of soda 5 pounds. Use half a pound of this instead of the same amount of the regular ration, twice a day.

LIME WATER GOOD.

The question is often asked, "What is a good cleanser of dairy utensils?"

An excellent preparation will be found in lime water. This may be made by dissolving a pound of lime in water and when slacked add enough water to make six gallons. Let it stand until the lime particles settle and use the clear water on top to wash the utensils. This will be free from germs and bacteria of every kind and will be death to those with which it comes in contaca within the utensils.

Old sour swill barrels are not favorable to the health and well being of hogs and pigs. Old decayed milk is a germ breeder and is not fit for any creature as an article of food. It should be "cast out and trodden under foot of men," or rather into the dunghill. Scald the barrels once a week.

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CALF CARE.

Allow the calf to suck for about two days after it has been dropped. It is not necessary that it be with the cow at all times, but it should be allowed to assist in removing all the cake from its mother's udder. Some object to allowing the calf to suck at all, but I have had the best success by allowing it to suck for at least forty-eight hours. Of course, the calf is harder to teach to drink after it has been allowed to run with the mother for a while, but, it is much safer for the cow, especially if she is a heavy milker. It is impossible for the dairyman to remove all the cake when the milking is done by hand and then the mother will have her mind upon her calf and will refuse to "give her milk down."

As soon as the udder is normal after calving, remove the calf and teach it to drink. While it should not be starved, it should be allowed to become very hungry that it will willingly eat, even if its eating is not exactly in the natural way. For the first week it should have whole milk. Then begin feeding whole milk in the morning and a mixture of equal parts of whole milk and sweet skim milk in the evening. Follow this for another week. Then make both evening and morning feeds equal parts of whole and sweet skim milk. At the end of another week make the evening ration entirely sweet skim milk and at the end of another week make the entire ration sweet skim milk. In this way the change is made so very gradual that the calf is not affected by it.

It should be taught to eat a little corn meal as early in its life as possible. Skim milk contains more protein than any other important food element and it needs a fat-forming food to take the place of the cream which has been removed. This can be supplied in corn. Give it at first in the form of partially cooked gruel, giving about a teacupful to each calf. At the end of two or three weeks, the gruel can be replaced with raw corn meal. After the calf has learned to eat it raw, it should not be mixed with the milk, but fed in a box or trough. As soon as possible get the little animal out upon the pasture.—S. E. Wallace.—In Journal of Agriculture.

CALF SCOURS.

The time is near at hand when young calves will be troubled with scours unless watched closely and fed carefully. Too frequent sucking will bring on dyspepsia and this leads to scours. Allow the calf to suck at regular intervals. In this way it will not take too great a mass into the stomach at any one time. Should a serious case of scours occur, the following remedy given by Dr. Snead will be found of value, often effecting a cure at once:

"Give a dose of castor oil to clean out the bowels, then follow with two tablespoonfuls of the following every six hours until the scouring stops: Tincture of opium, tincture of ginger, tincture of rhubarb and essence of peppermint, equal parts. Give this in a pint of lime-water. It is a good plan to give in addition to this a tablespoonful of dried blood in the soft feed."

Dr. Salmon, a good authority says: "Treatment should vary according to the nature and stage of the disease. The first thing is to remove the irritant matter from the bowels. For this give one to two ounces of castor oil. Then reduce the milk to one-half that formerly given. If the stools smell sour, the milk may be replaced by one ounce of calcined magnesia and in any case a tablespoonful of lime-water must be given at each meal. When the offending agents have been removed by the castor oil,give one dram of anise water, one dram of nitrate of bismuth and one dram of gum arabic, three times a day. Under such a course of treatment the stools should become natural in a day or two."

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INFLUENCES BEFORE BREEDING.

But the influences during pregnancy are not the only ones which affect the offspring. There are certain things to take into consideration before breeding the animals. One of these is selection.

This brings us back to one of the laws of breeding which was considered in the first article, the law that like produces like. By selecting breeding stock which conforms to the ideal we are able to substitute new breeds and perfect those which have been instituted. Occasionally there is a variation and if we select two similiar specimens of a variation and use them as the breeding stock we are able to lay the foundation of a new breed. This is no doubt how the so-called owl pigeons came into existence. By variation the first specimen or two came into existence and by selecting them as breeding stock the foundation for a new and novel breed was laid. Then by selecting the offspring which were true to the new type and using them as breeding stock, the breed was perfected.

At this point the principle of in-and-in breeding can be employed to a great advantage. By in-and-in breeding is meant the breeding together of animals which are very closely related. It often becomes necessary to breed brothers and sisters together in order to perfect a certain type. In-and-in breeding is usually necessary in forming new breeds, and it is absolutely necessary in perfecting these breeds. When a brother and sister have desirable qualities and so far as the breeder knows no other animal on earth has the same qualities, it becomes necessary to breed these two close relatives together to perfect the type desired. When the breed is already established, as is the case with all the well-known breeds of horses, cattle, hogs and poultry, in-breeding is by no means necessary and the breeder practicing it is only inviting disaster. Where it is continued for a number of generations, or is practiced by the amateur, it invariably results in a type of animals which are little better than runts. They have a weakened constitution, and if the practice is carried too far the animals will lose the power of reproduction.

The only thing necessary for the breeder who is attempting to raise the established breeds, is to keep up the health of the herd and to breed to keep the animals true to the type. To maintain the health of the herd it is necessary to maintain the constitutional vigor. The constitutional vigor may be told by a broad, deep, compact form, with a barrel or coupling which is reasonably large, but neither too long or too short. The head should be short and wide between the ears. Much width between the ears means development of great nerve power. Nothing denotes the health and vigor of an animal more than the eyes. When the animal is healthy, the eyes are full and clear, but as soon as it is stricken with disease, the eyes become weak and lose their clearness. A wide breast and chest also show strong constitutional vigor. This means roominess and great vital force. The vital organs have much room for action, and when this is the case the animal will surely be healthy. The breeding animals should have a lively carriage. If the animal is vigorous, it will show the fact in its carriage. It will be spry and move about with no uncertain step. If it is ill or suffering with some constitutional disorder, it will move about slowly and its action generally will be so faltering that it can be easily told by even the inexperienced person.—Journal of Agriculture.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

PIGS AND ALFALFA.

Pigs will show a much more rapid development if alfalfa is mixed with a little grain to balance the ration. Pigs will grow, of course, on alfalfa and make a rapid growth, but they will do better to mix a little grain daily with their feed. The grain is needed to increase the number of pounds of food elements without correspondingly increasing the amount of dry matter.

Several years ago the Nebraska station made an experiment to learn what proportion of grain to alfalfa was needed to make the most economical ration for growing hogs. It was found that the cost of producing 100 pounds of gain on alfalfa pasture alone, was about $4.30. On alfalfa pasture with an addition of one and one-third pounds of grain the cost of 100 pounds of gain was lowered to $2.74 per 100. When the grain ration was increased to two and a half pounds per day, the cost was lowered to $2.45. It can be seen by feeding only one and a third pounds of grain ration per day, the cost of producing the 100 pounds of gain was lowered nearly one-half. While one single test should not be taken as reliable, it certainly shows that pigs should not be expected to pass the summer without a little grain ration.

CURE OF FOUNDER.

The question is often asked, what is Founder in horses, and what will cure it? The books describe founder as being similar to acute rheumatism, or rheumatic fever, sometimes affecting the muscles of respiration and sometimes the heart itself. It is is known that if the overfed horse is even slightly exposed to exciting causes, founder will rapidly develop.

Dr. Dadd advises the use of the following nauseating cathartic: Powdered aloes, six drachms; pulverized lobelia, two drachms; warm water, one pint. After this has acted, give a dose of cream of tartar, sulphur and podophyllum, each two drachms in a pint of warm water as a drench.

These remedies should be given as soon as the trouble appears or they will be of no avail.

The stallion which does not mark his colts should not be bred to. The stallion is, or should be the better animal of the two and he should be so prepotent that he is able to impress his superior qualities on the colt. If he fails to do this, he is generally but a very little better than a scrub horse.

HOLSTEIN TRANSFERS.

From the Bulletin of the Holstein-Fresian Association, we learn of the following transfers of registered bulls in this State:

Ciruela Mechthildus, Dr. C. W. Evans to J. W. Davison, Modesto.

Damisela De Kol, Dr. C. W. Evans to C. M. Beckwith, Modesto.

Paul Butter Boy of Riverside, Chas. D. Pierce to F. F. Pellissien, Los Angeles.

This is the season of the year when special attention should be given the shoulders of horses. Keep the collars clean by washing and frequent oiling. Wash the necks in the evening after the day's work is done to remove sweat and dust.

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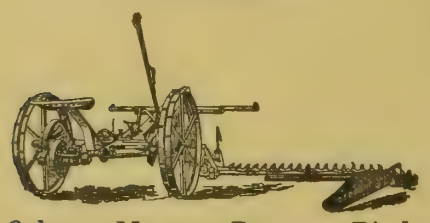

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BALANCED RATIONS.

During the winter of 1902-3 at the Nebraska Experiment Station the value of alfalfa hay when fed in connection with corn was carefully tested.

The experiment lasted during a period of 12 weeks. One lot of five shoats was fed corn meal alone, while another lot containing the same number of shoats of similar quality were fed 80 per cent. corn meal and 20 per cent. alfalfa.

At the close of the experiment it was found that the average gain per hog in the lot fed corn alone was 78.6 pounds, while the average gain per hog in the lot fed corn and alfalfa was 101.6 pounds, a difference of 20 pounds per hog in favor of the corn and alfalfa ration. In the lot fed corn alone each 100 pounds of gain cost $4.48, while in the lot fed corn and alfalfa each 100 pounds of gain cost $3.40, a decrease of $1.08, or a little over 24 per cent. in the cost of producing each 100 pounds of gain. The point which interests us is that this wonderful lessening of the cost of production was brought about simply by feeding a balanced ration, and one which nearly every farmer has at his command.

It is almost startling when we stop to think that if only one-twentieth of the corn produced in Nebraska during the past season is fed to hogs as a single food, according to the figures which we have just quoted, more than a million dollars would be added to the wealth of the state if alfalfa should be substituted for one-fifth of the corn, thereby making a balanced ration. It has been well said that corn is the king of hog feeds, but it may be as truly stated that alfalfa is queen. Where one is there should the other be also.

Another experiment which brings out the value of the balanced ration very plainly was conducted at the Iowa Station.

Twelve excellent cross-bred shoats, averaging 205 pounds each, were divided into two lots of six each. One lot was fed corn alone and the other lot was fed corn and Swift's digested tankage.

At the end of 49 days it was found that a ration of corn alone had produced 100 pounds of gain at a cost of $5.10 while a ration of corn and tankage had produced 100 pounds of gain at a cost of $4.50, a difference of 60 cents a hundredweight in favor of corn and tankage. The lot fed on corn alone returned 83 cents for each bushel of corn fed, while the lot fed on corn and tankage returned 97.5 cents for each bushel of corn fed The net profit per hog in the lot fed corn alone was $2.39, while the net profit per hog in the lot fed corn and tankage was $3.22, a difference of 83 cents per hog in favor of the corn and tankage ration.

The lesson taught by this experiment is plain. It shows that by simply adding tankage to corn, thereby making a balanced ration, the net profits per hog were increased a little over 34 per cent. It was after reading the bulletin containing the facts which we have just stated that we decided that, in the absence of alfalfa, it would pay to buy tankage or some other by-product rich in protein to feed in addition to corn to the hogs we were then feeding for market. A careful trial convinced us that the plan was a good one, and we have continued the practice from that day to this.

The balanced ration has another value which we have not yet mentioned. It is a value measured not in dollars and cents, but by the increased health, strength and vigor of the hogs to which it is fed. It is the value which should appeal most strongly to the pure-bred swine breeder.

As a result of feeding a balanced ration, there is not only a larger proportion of lean meat, but there is a greater development of the internal organs, and healthier, thriftier hogs are the result. There is hardly room for any doubt that if more attention was given to supplying our hogs with balanced rations there would be a decided improvement in their size, quality and vigor, and a consequent decrease in the losses from cholera and other diseases.

The feeding of a properly balanced ration also has a very beneficial effect upon the strength and density of the bones, as was revealed in a recent slaughter test at the Nebraska Experiment Station.

The strength of the thigh bones of a pig fed on corn and alfalfa were tested in a machine constructed for that purpose. It was found that the bones of the corn-fed pigs were one-sixteenth of an inch larger in diameter. The thigh bones of this pig broke under pressures of 320 and 339 pounds, while the bones of the corn and alfalfa fed pig broke under pressures of 500 and 520 pounds.

This test brought two important facts to light; first that the ability of a hog to stand well upon his feet is a matter of density of bone rather than size, and, second, that that density of bone may be secured by feeding a properly balanced ration.

Since one's profit may be increased 25 to 35 per cent. by feeding a balanced ration, and since such a ration adds greatly to the health and strength and vigor of the hogs to which it is fed increasing their ability to withstand the inroads of disease, and rendering them better able to perform the function of digestion, assimilation and reproduction, it would seem that no one would continue the old method of feeding corn alone.—R. H. Searle.

George Washington III, No. 5510
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WHEN TO BREED SOWS.

A subscriber asks: "How soon can I breed my sow for a fall litter after she farrows this month? If the sow has farrowed in May she should not be bred for six weeks, as to breed within that time time will bring the farrow in the hottest part of the summer, which is not good either for the sow or the pigs.

Inquiring boy to his mother: Ma, what did the moths eat before Adam and Eve wore clothes?

The Vegetable Garden

By ERNEST BRAUNTON

COMPARATIVE VALUES OF MANURES.

In a statement issued by Prof. Wickson some time ago regarding comparative values of manures, he said:

The excrement of different animals serve somewhat different purposes in garden practice because they act more or less quickly and are more or less stimulating to the plant. There is also warrant in carrying with the word "stimulating" the inference that in feeding plants, as in treating animals, that which is the most stimulating must be used with the greatest caution. Both caution and economy prescribe that the manure which has the highest content in plant food should be used in less amount and more carefully distributed through the area of the soil which the roots of the plant are expected to traverse. The excrements of animals depend in composition upon the abundance and richness of the food furnished them. The following table is compiled from experiments and analyses made at the Cornell University, and there is no doubt that he stock was well fed:

Animals	Nitr. P. C.	Pot. P. C.	Phos.ac. P. C.	Val. P. ton
Cows	0.50	0.29	0.45	$2.37
Horses	0.47	0.94	0.39	2.79
Sheep	1.00	1.21	0.08	4.19
Swine	0.83	0.61	0.04	3.18
Hens	1.10	0.29	0.47	4.22

Value per ton is also conditioned upon the percentage of water in the manure. Hen manure has much less water even in the fresh state than that of cattle, and air-dried hen manure, free from earth, is sometimes worth as much as $10 per ton, providing the hens are well fed. California sheep manure has much greater value than that of Eastern corrals, the analysis showing as high as 2.32 nitrogen, 2.90 potash and 2.88 phosphoric acid.

IMPROVING THE QUALITY OF "RIVER" POTATOES.

There is a well marked difference in the quality of potatoes grown in the Salinas valley in California and those grown on the numerous islands of the Sacramento and San Joaquin rivers. This difference lies primarily in the greater "mealiness" of those grown in the region of Salinas. The difference is so great as to materially influence the price of the river potatoes unfavorably.

The yield obtained upon the island soils is extremely favorable and could the growers produce as high a quality and obtain as high a price for them as do the Salinas growers, there would be a material gain in their income.

Physically, the soil of the island sections is unusually well adapted to the production of potatoes and root crops of all kinds, but in the matter of quality growers of the region have never been able to compete successfully with those whose lands are not as abundantly supplied with nitrogen in the form of decaying organic matter.

The abundance of this material gives to the tubers and roots an unusually large size but also tends to produce a more or less watery product. The writer is of the opinion that this may be the result of an unbalanced ration—too much nitrogenous matter in proportion to the mineral plant food available for the crop. Could the condition be remedied, it is believed that there would be a marked improvement in the crop. Should this be found true then there is no crop upon which it should pay better to feed with the mineral plant foods, potash and phosphoric acid.

At the present time there is little fertilizer of any kind used on the large potato plantations of the islands, but growers are recommended to make a thorough trial of these materials, not so much with the idea of increased yield, but more particularly with respect to an improvement of quality of the product.

Stable manure is not a proper source from which to obtain plant food for this crop, for it has been shown that it is almost certain to make the tubers scabby, irregular in shape, and will still further affect the texture. There is already too much nitrogen in these soils and any further addition in the shape of stable manure would but increase the difficulties already existing. A crop of 200 bushels of potatoes removes from the soil in tubers, etc., 46 pounds of nitrogen, 74 pounds of potash, and 21 pounds of phosphoric acid, which clearly shows the needs of this crop for mineral plant foods. These soils furnish to the crop an abundance of nitrogen, but are short in the mineral matters, potash and phosphoric acid. These should be supplied.

The requisite material can be added by the use of 1000 to 1500 pounds of a fertilizing material containing actual potash 9 per cent. and available phosphoric acid 6 per cent. Even larger quantities than this have been used. Potatoes, like all starch producing crops are large users of potash and need liberal supplies of this element. Experiments made at the New Hampshire Station showed that potash was the most important element for this crop.

Numerous experiments have also shown that of the several forms in which potash can be obtained on the market, the sulphate is the most desirable for this crop. The phosphoric acid may be obtained in the form of either bone or rock superphosphate, or Thomas slag. If the latter is used it is absolutely necessary to work it deeply into the soil. In fact, it should be plowed into the land. Harrowing will not suffice to place it deeply enough in the soil.. The following has been found a very satisfactory manner of applying the fertilizer for this crop.

The land is first marked and a furrower is run along the rows, making a furrow about four inches deep. In this furrow the fertilizer is applied either by hand or with a distributor, and well mixed with the soil. The mixing is best done by running a cultivator along the row, for if the distributor is used, a mixing attachment can be used thus doing the distributing and the mixing at one and the same operation. The potatoes are then dropped in the furrow and covered. If it is desired to cultivate both ways the land can be marked across the furrows after the fertilizer is applied.—Geo. Wright.

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On earth that soonest pass away—
The rose that lives its little hour
Is prized beyond the sculptured flower.
—Bryant.

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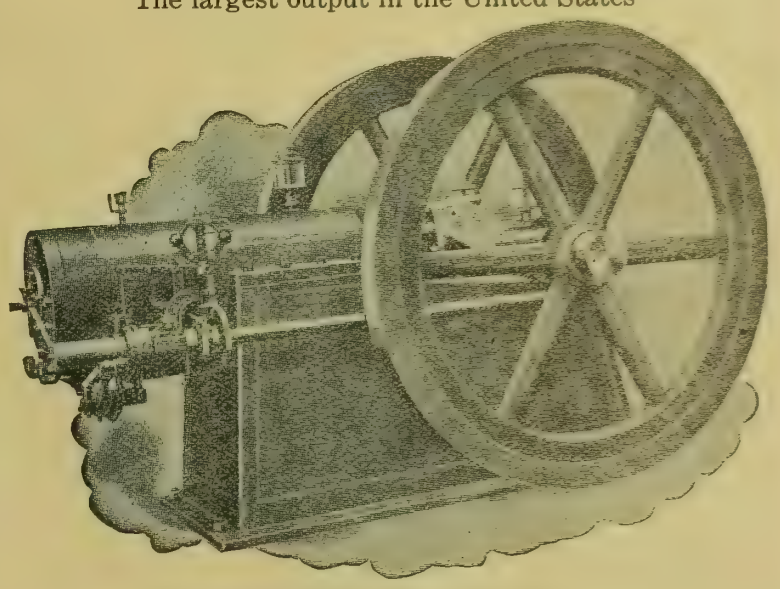

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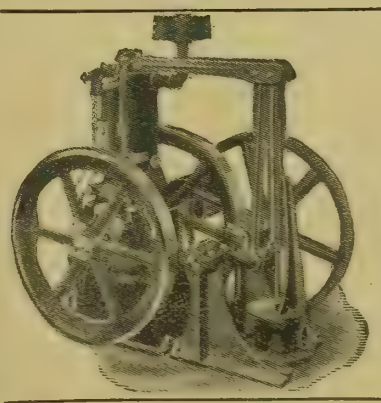

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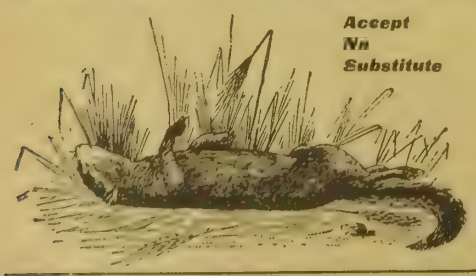

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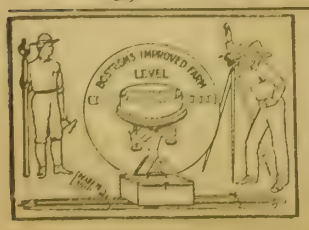

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California Horticulturally

By JOHN ISAAC, Sacramento, California

GOOD OUTLOOK FOR FRUIT.

LATER reports are to the effect this season will be a good one, that the fruit crop as a whole perhaps somewhat short of normal, but very much better than that of last season. There is an assurance of a good demand and consequent good prices which promise to make it the most prosperous season that the grower has had in many years, even if there is a light shortage. Reports from different sections vary greatly and rather indicate that the crop will be spotted. Peaches in some sections are given at not over one-third of a crop, in others they are reported as full and very heavy. In spite of early predictions, however, it is safe to state the fruit crop of the state as a whole will be at least fair and prices very good.

CANNERIES ACTIVE.

The canneries of Northern California are already being put in shape for the season's campaign and it is announced that they will put up the largest pack of fruit in their history. The stock of canned goods on hand is nearly exhausted and the demand for new goods is active. Very large orders have already been received and it is doubtful whether the canners will be able to fill their orders. Several of the largest canneries have largely increased their capacity and the outlook is for a very busy canning season.

LITTLE PEACH BLIGHT THIS SEASON.

As was to be expected, there is little peach blight reported this season from those sections which were badly affected last year. Very many orchardists took no chances but sprayed with the Bordeaux mixture early in the season, but even those who have done no spraying, report the blight as decreasing. The fact is, that the peach blight is a fungous disease and is very largely dependent upon climatic conditions for its virulence. In some seasons, when conditions are favorable for its growth, it becomes alarmingly destructive, but will almost disappear another season. This disease has been known almost ever since we began to grow peaches in California, but has been rarely destructive for two seasons in succession. It is of an entirely different nature to the pear blight, but the destructive ravages of the later caused peach growers to become panic-stricken when the peach blight made its appearance. It is well to take every precaution against it, but there is no need to fear that this disease will ever be to the peach what the pear blight is to the pear.

PROSPECTIVE SHORTAGE OF LABOR.

The fruit growers of Sutter county some time since met and formulated a scale of prices which they would pay for the Japanese labor and agreed among themselves not to pay more. It is not improbable before the end of the season, that instead of sticking to their agreement, they will be breaking their necks to hire the Japs at their own figures. Supply and demand regulate labor prices as all else, and this season there is likely to be an active demand for any kind of labor and the grower who can get it at any price will be among the fortunate ones. The exclusion of the Chinese has cut off a very important branch of field labor, the great demand for labor of any and all kinds in the city at wages that the farmer cannot afford to pay is draining the country of its white laborers, the embargo now being put on the Japanese is already cutting that supply short. Eastern labor has all it can attend to at home and will not come West, and so it is directly up to the California fruit grower and farmer to look out for his interests in the best way he can. He may have to set his wife and children at work in the field, as in Europe, at which the average American mind revolts, but when crops are grown they must be cared for and that, with any labor available.

THE STATE FAIR.

Secretary J. A. Filcher, of the State Agricultural Society, is already moving in the matter of the next State fair, and it is his intention to make it the most successful one ever held in California. When Mr. Filcher took hold of the work last year, the State fair had fallen into disrepute. It had become a mere horse show and a racing and gambling event. It was roundly denounced by the press of the State and the best people took little stock in it. It was in this condition that Mr. Filcher found it, and it was a Herculean task to lift it out of the slough into which it had fallen but he went bravely at he task and the last fair was the first in many years that could justly be called a State agricultural fair. Many of the counties, however, from their past experience with it, refused to come in but there was nevertheless a good showing from various sections, and Southern California was represented by San Diego and Los Angeles. It is to be hoped that this season will see it a truly representative exposition of the whole State, and this it should be now, of all times, as it has been so arranged that it will be held at the time that the Irrigation Congress will be in session at Sacramento, and it is desirable that people attending this Congress should be enabled to see what the leading irrigating State of the Union can do in the line of agriculture.

VALUE OF GOOD ROADS.

The Department of Agriculture issued a bulletin showing the cost of hauling the principal crops to the nearest shipping point. Nearly $29,000,000 was spent in a single year to get the corn crop shipped, this item representing nearly 10 per cent. of the value of the average load carried. In the case of wheat the aggregate cost was nearly $22,000,000, or a little over 7 per cent. of the value of the load. Taking twelve of the principal products the aggregate cost of hauling to a place of shipment was $73,000,000. No better argument could be made in favor of good roads than this table of figures. The statistics indicate also the possible saving through the development of freight-carrying trolley lines, bringing the farmer nearer to the point of shipment. With an annual outlay of $73,000,000 for hauling $1,500,000,000 worth of ordinary products, it is plain that the savings secured by improvement of transportation facilities would be enormous.—American Farmer.

With the Citrus Growers

By J. W. MILLS

VICIA SATIVA.

DURING the past year we have had numerous inquiries as to the proper name of the vetch that is so extensively grown in Southern California.

We have been growing a number of legumes as green crops for a few years, and the best one so far tried is similar to that so entensively grown in the South. It differs but sligtly, in appearance being very smooth in stem and leaf but is fully three weeks earlier in maturing than is the kind most extensively used. That which was planted late in December has made its growth and matured seed, while earlier plantings of the other are just blooming. The growth of both is about the same. Samples of each were sent to Berkeley for identifying and we have just received a letter from Prof. H. M. Hall that both are Vicia sativa, one early and one late maturing variety. The early sort is less hairy than the late kind.

CUT WORMS.

Orange growers are in trouble in various sections on account of cut worms climbing the trees and eating both ripe and young oranges. This is due to the growth of weeds and green crops that have grown under the trees. We have heard some growers say that it cures them of growing green crops. This is rash talk for it it entirely easy to grow the crops and not be injured by the worms. If the weeds and green stuff are plowed under before worm time comes around, they will be destroyed in the main body of the orchard and by mowing the weeds from under the trees early in the season, the millers and butterflies will not have the proper kind of material on which to lay their eggs, and as a consequence they will keep away from there, confining their laying operations to those plants which may be turned under with a plow. This plan necessitates working systemmatically which is the proper way after all. However, growers who have large orchards cannot always keep up to date with all these jobs and keep in practice they "get caught" as the saying is with certain things undone that should be done. As a precautionary measure to be put into practice keep the lower branches trimmed so that they just clear the ground. One of the best growers in the State always keeps his trees trimmed so that the lower branches are ten inches or a foot from the ground. He claims that fruit that touches the ground is of little or no value anyway.

If trees are trimmed thus and no weeds extend up into the branches, the worm must ascend the tree trunks to get at the fruit. This being the case, they can be easily kept off by bands of fly paper or alfalfa poisoned with arsenic.

The latter is perhaps the quickest and cheapest. Boil one pound of white arsenic in two gallons of water with four pounds of sal soda till all the arsenic is dissolved. One quart in 40 gallons of water will make a strong poison of it, but a stronger solution will do no damage as long as none of it touches the tree or foliage. Dip freshly cut alfalfa in this and throw a handfull of it under each tree. By stirring in a few drops of oil or rhodium before wetting the alfalfa, it will attract the worms and a few bites of the poison stuff will kill them.

There are several ways of successfully combating the worms without resorting to clean culture. Orange growers especially cannot afford to abandon this practice of growing these crops as they are the life of the soil. Keep the lower branches off of the ground and there will be many advantages. A low constructed cultivator can then be run under the branches without injury to the trees and save much unnecessary labor. Home made implements of this sort have been made and operated with perfect ease. It is not advisable to trim the trees so that the lower branches will clear the ground more than a foot. This will give ample protection to the base of the tree and will not make the grove have the appearance of one that is high pruned.

The poisoned alfalfa is a good remedy for worms that attack grape vines.

FROM A FLORIDA STANDPOINT.

A writer in the Florida Agriculturalist in advocating plucking by hand instead of stem cutting of oranges gives a view of conditions in marketing and quality of fruit which may have some interest for California readers. We give extracts from it for what it is worth:—

"If the stem left on the orange by clipping strikes another orange with a fall of two feet it bruises or makes a hole, and if inoculated with the rot germs in the packing house it is very apt to inoculate the fruit it strikes.

How easy it would be, while experimenting, to drop those same oranges two feet or twenty feet, if onto soft plowed ground, and box or barrel them before they enter the packing house, and then compare the percentage of loss with those that passed through the packing-house. No need to ship them. Just let them stand a month where they can be watched and given the same treatment.

And why not try some broken or twisted off (not pulled, for that would plug the orange), taking the fruit in hand and turning it backward until the stem cracks, and then a slight twist brings it off, leaving the calyx still on the fruit, but no sharp stem to drop on and puncture other fruit. Then pack some in packing house and some outside, and note the difference, if any, between plucking and clipping. We already have the government report stating a loss of 15 percent from clipping, which added to the 70 per cent. caused by dropping two feet in a packing house, leaves very little sound fruit for the commission man to handle.

Why did those Australians abandon clipping after such a short trial? Are they fools and don't know a good thing when they see it? Or is it necessary to lose 15 per cent. by using clippers when they can be plucked easier and faster by using both hands at the same time?

Now, I am still shipping and will quote from a letter received from Newbern, N. C., dated March 2, 1907.

"I think all oranges have gotten here that have been started, but it took a long time. Some shipped January 24th getting here February 18th, and of course the worse for their long outing. You had better drop freight, for those longest out are in bad hard shape. (Notice no complaint of rot but of hardness.) It is wonderful how long they will remain good. Those shipped January 24th went to Charleston, and goodness knows where else, out twenty-four days (in sugar barrels), and yet in condition for sale, but when enroute so long they lose their gloss and fresh look, and take on instead a dull, wilted appearance. (They were wilted from drought before starting.) At this stage it takes talk to make sales, and generally a sample cut open to prove the deceptive appearance of the fruit, but where there is juice and that sweet it usually ends in a sale.

"At this season there is more loss in every way, and it is luck to escape to any considerable extent. The fruit being ripe does not stand long transit and rough handling so well and decay is the result. A barrel of ripe oranges from Florida here has a decidedly tough experience. Did you ever think of it? Started off in fine shape, and with a temperature of 60 degrees perhaps, they soon encounter a cold blast that makes them lumps of ice. The temperature then moderates, and the oranges warm up and sweat till the barrel shows the dampness in every crack, and in that condition they encounter freezing weather again, and finally arrive at destination either hard and firm from cold or undergoing their second sweat. It is wonderful how they stand it at all. And it does them no good, for it kills the nice varnish gloss, hardens and toughens the skin and deadens the flow of juice so that the orange is unfit for suking, which is a favorite way for many. All the fruit received since January 1st has pulled through just these conditions. Many of the shipments had to stand two freezes, in which the temperature fell to 16 degrees, and it would feel like opening the door of an ice house when the head of a barrel was taken off, and yet I have lost nothing during the season from cold, rapid sales carrying everything away before having a chance to dry up or rot. (How does that compare with 70 per cent. of rot in three weeks?)

"So far this season the California navel cuts no figure except, with the huckster, who wants something nice, bright and showy for his stand.

You will notice from the preceding that the rot cuts no figure, and the only complaint caused by the long time enroute is of the hard, stale look of the fruit after four weeks of abuse by weather and railroad hands. And yet when I packed those oranges they were so soft from the drought (and many of them "drops") that they would not hold their own shape, and I feared to pack a whole barrel with oranges alone and so filled the lower half with grape fruit and filled up with oranges. But instead of getting softer and rotting they got harder and looked so unsalable that I advised soaking them in water after their arrival. The culls in my packing house dried up the same way."

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California Cultivator

ESTABLISHED 1889.

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LOCAL CIVIC PRIDE.

Taken as a whole California is a beautiful State. Scarce a locality anywhere that does not abound in lovely environments. Especially is this true of the section known as Northern California. There the typography of the country is inviting to the eye because of its varied scenery. Green-clad hills, rugged mountains, streams of pure water, and quiet valleys enchant the eye and attract the tourist as a home-maker. One thing, however, is noticeable in most of the small towns in the State, and even in many larger ones, for that matter; there is not enough attention paid to outward appearance. Streets are not kept clean; weeds are not cut and burned from the vacant lots; and there are too slovenly and unkempt conditions generally prevailing. It is some effort to clean up a town, and it also requires time and money to keep a place neat, but it pays to do it. The size of the town is not what makes it a desirable place to live in. A live, prosperous town is a desirable one, and such a town may be a small one. Every citizen should take a personal interest in its welfare. Each citizen is a part of the town and either helps to make or unmake the place. Prosperous citizens are always public spirited and united. They take pride in their community. They stand together and work together for the interests of the town. They don't grumble and spend their time phophesying failures of private undertakings, but always stand ready to do their part and to help make enterprise a success, and that is what makes a town worth living in.

Civic pride, pride in everything which pertains to the place in which we live is absolutely essential to the prosperity of all citizens. If this element is lacking, the town remains dead and the people become dissatisfied, the more progressive leave, and only the "let well enough alone" class remain.

California is wealthy enough now, to begin to devote time and money to civic improvements. We need a campaign of education all over the State. In the northern third, nature has done a marvelous work of its own, but it needs the genius of man applied to its conditions to acquire the rounding out of its possibilities. The mountain roads need work to make them what they should be. The streams need better bridges, the streets and roads need cleaning and hundreds of thousands of trees set out on their sides to beautify them and afford friendly shade from the boiling summer sun.

Nowhere are better natural advantages offered to make the "Switzerland of America" than in the naturally beautiful section of which we speak. No other part of California is so lovely in summer and if its people will organize local civic societies in every community, even if not a hundred souls reside therein, and these civic societies will address themselves studiously to the one idea of making all possible out the natural advantages they possess, how incredibly rapid would the changed conditions appear. No other section of the State would come anywhere near accomplishing such results in so brief a period of time. Water the one thing needed to develop conditions to their best, flows abundantly much of the time, and is easily obtainable when not flowing, where provided for in suitable reservoirs.

So the things essential to California's splendor, as a State, is enterprise, civic pride, and everlasting hustle on the part of its citizens. As a matter of fact, property values depend on the enterprise of the people.

NEW METHOD OF INFORMATION.

The country at large is interested in the plan being worked out by Representative R. P. Hobson, who has been elected a member of the National Congress from Alabama. Captain Hobson is putting into effect a novel plan of distributing agricultural information among the farmers of his district.

With the idea of securing for his people the best information on agricultural methods, he has secured a number of experts from the various bureaus of the Agricultural Department, and will personally go with them through his district. He has arranged a number of meetings and is making every effort to obtain a large attendance at each one. At these meetings he will speak, and he will also be accompanied by scientific lecturers from the Department of Agriculture who will give specific information on all subjects relating to crops grown in Alabama. It has occured to us that this novel method of promulgating scientific information, could well be adopted by members of Congress in nearly all sections of the country. They need not, necessarily, call upon the department at Washington for all their lecturers, but take well educated agricultural speakers from the various states, who are advised on agricultural subjects pertaining to their localities.

We are in an age of agricultural development such as the world has never before witnessed, and the necessity for advanced information is more apparent with every succeeding year. It seems to us that a campaign on the part of Congressmen along the line adopted by Captain Hobson, would do more to make them solid with their constituents, and insure their return to Congress in a far more substantial way, than by the old method of haranguing the people on political topics. We have adready had too much politics. We need more scientific education; we need enlightened speakers and writers of pronounced ability and experience to educate us along lines heretofore untraveled in the agricultural field. Captain Hobson is to be congratulated on the innovation he is making, and it is to be hoped his example may be followed by Congressmen in all the States of the Union, so that diversified farming may receive an impetus which it so much demands.

WALNUT INSTITUTE.

The walnut growers of the State will be interested in the announcement which appears on page 540 of the Cultivator, of a Walnut Institute to be held at Whittier, June 5-6. This meeting will be addressed by J. B. Neff, the veteran walnut grower, Prof. Wickson, Prof. Smith and Judge Leib of San Jose, as special speakers. One of the topics which will receive special attention will be walnut blight. Every grower in the State should be at this meeting.

The people of Utah have decided to segregate their Agricultural college from the State university. It is thought that by so doing a greater interest may be secured in the agricultural college.

GRASSHOPPERS.

Continued from First Page

both practicable and efficient. It is constructed of sheet iron, preferably galvanized, of reasonable thickness to insure strength, and, except for the end pieces, made of a single sheet 10 or 12 feet long and 26 inches in width. The front is formed by turning up one edge a couple of inches, and the back may be turned up a foot, thus making a shallow pan 1 foot wide, with the back the same height and with a front two inches high. Ends are riveted in and soldered, as shown in figure eight. Runners of old wagon tire are placed at each end (a, b), and another in the center (e) is turned over in the front and back to strengthen the pan at these points. These runners are riveted to the pan, as shown, and should extend both backward and forward in order to overcome to some extent the inequalities of the ground and cause the hopperdozzer to run more smoothly. By soldering it about the heads of the rivets the pan will be made water-tight. The pan is filled with water on which is poured enough kerosene to cover it with a film, a horse is hitched to the end runners, and the outfit is then ready for use. As the hopperdozzer is drawn over the ground the locusts will either jump into the kerosene and water direct or against the back and drop into it and there be killed. By using longer, wider, and heavier sheet iron a larger and stronger pan can be made and this further strengthened by additional runners; a horse can then be hitched to each end, or the pan may be mounted on low wheels. The whole thing is easily constructed, inexpensive, and once made may be put into service year after year as needed. The only place where its use will prove more or less impracticable will be on hilly or rocky lands.

Poisoned Baits.

Here again we have an inexpensive, practical way of dealing with these grasshoppers even when, as is frequently the case, they breed in the alfalfa fields and the protection, whatever it may be, must be applied there. What has come to be known as the "Criddle mixture" is giving most satisfactory results on the ranches of both the United States and Canada. The mixture is composed of half a barrel of fresh horse droppings in which is mixed one pound each of salt and Paris green. If the horse droppings are not fresh the salt is dissolved in water and mixed with the manure and poison. When this mixture is scattered freely about where the grasshoppers are abundant they seem to be attracted to it, for they devour it readily and are poisoned thereby. Dr. James Fletcher, entomologist for the Dominion of Canada, cites an instance where this mixture had been scattered freely around the edges of a field and states that his particular field stood out as a green patch in a brown plain, as it was situated in the midst of fields where nothing had been done to destroy the grasshoppers. This Criddle mixture now seems preferable to the poisoned-bran remedy that has given and still continues to give beneficial results, for it is less expensive than the latter and less likely to poison other animal life.

Co-operation.

Co-operation between farmers or ranchmen is of the usmost importance, whether the hopperdozer or poisoned baits be used. On some of the most extensive ranches the owners can protect themselves by reason of the great extent of territory that is under the control of a single individual, but among smaller holdings co-operation is very essential.

Forestalling Outbreaks.

The ranchman would style this "watching out for trouble." By this is meant the careful watching of the fields for the appearance of the grasshoppers. When these are found to be present, do not wait to see what they are going to do, but prevent their doing anything by putting into practice, before any damage has been done and while the grasshoppers are very young, whatever measures are to be used. It usually requires several days to poison the grasshoppers, and large areas can not be traversed with the hopperdozers in a day. Do not then wait to see what the grasshoppers will do, but see to it that by taking them at the start they are prevented from doing any harm.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

Holtville reports a young boom in the dairy business.

Ranchers are cutting hay at Hemet. There is a very good crop.

Alfalfa growers about Los Angeles have been suffering from the cutworms.

Thermal reports a total of over forty-two cars of onions shipped this season.

Turkey raising is an industry of promise at Holtville in the Imperial country.

Riverside Chamber of Commerce is exhibiting stalks of oats more than six feet tall.

Ranchers of Anaheim are sending out a great cry for more help in orchard and field.

There is approximately 100,000 acres subject to reclamation in the Imperial Valley.

The average price for onions in the Thermal district is two cents per pound to the grower.

Oxnard reports the crop of beets doing nicely; the acreage will be smaller than last year.

It is predicted that the crop of beans in Ventura county this year will be greater than ever.

W. H. Faulkes of Valle Vista brought in to Hemet some alfalfa last week, six and one-half feet high.

The crop of hay about Oxnard is reported greatly reduced by the lack of the late rains which were expected.

Walnut growers about Saticoy report blight exceedingly heavy this year. The earliest nuts are reported an entire loss.

Extensive topographic surveys are being made in the Imperial country preparatory to the establishment of new irrigation lines.

Ventura county farmers are planning for an immense hay harvest, though it is claimed the crop, the country over, will be small.

Farmers having water rights in the Sierra Madre Mountains report the flow from springs and cienegas to be more profuse than for many years.

An immense submerged dam is being built near Ventura, which is nearly 1200 feet long and generally 30 feet deep before it found bed rock.

Bean planting is in full swing in Northern Los Angeles and Ventura counties. This is later than usual, owing to the cool and foggy weather of this season.

Moreno farmers are jubilant over new developments in that section which, it is to be hoped, will lead to much water, from new sources, being applied to their orchards.

The farmers southeast of Chino are hoping for an extension of the Salt Lake road through their lands to give an outlet for their products, give an outlet for their products, which are generally alfalfa and barley hay.

The Lompoc section has been visited lately by several cattle buyers and the prices quoted for cattle are exceptionally high, beef bringing 3 and 4 cents a pound, while pork is quoted at 8 cents. Sheep bring about $5 a head.

The cold weather of the Rocky Mountains has caused a lessened flow of the Colorado River, so that the amount of water passing Yuma at this time, which is approaching the flood season, is much less than that of last year.

A Los Angeles man named Wise has bought 5000 acres of land in Tulare county and will put it out to oranges. There is something in a name after all. If you have a little extra money our advice is, "Go thou and do likewise."

Order has been given from the United States General Land Office at Washington opening to entry a vast tract of land in the San Jacinto forest reserve. This, it is claimed, will give to settlers 129,280 acres; it will be subject to entry July 27. This is the largest tract ever opened in Southern California.

HORTICULTURE.

Redlands' rainfall amounts to 23.46 inches.

Corona reports extensive hay-making operations.

Ontario apricot growers are being offered $60 per ton.

Two orange-seed beds have been planted at Hemet this spring.

Nearly 3000 cars of oragnes is the output of Redlands at the present time.

Riverside has forwarded in excess of 4000 cars of oranges up to this time.

Extensive improvements are being made on the Chino ranch irrigation system.

Pomona men have filed on 100 inches of water at the mouth of Coble's canyon.

The apricot outlook for Elsinore is one of the most promising, and big prices are anticipated.

Corona reports 15.15 inches as its total rainfall to date. This is the highes rainfall for years.

The "Orange News" appeals to its readers to plant forests of camphor, maintaining it offers opportunities for wealth.

Planting of apricot orchards is reported to be more general in Southern California this year than heretofore for years.

There is a rumor that a syndicate of wealthy men is proposing to plant orange groves on the slope-lands of the Coachella Valley.

Orange county gardeners are finding great profit in raspberries, one farmer, near Garden Grove, having 100 acres set to these berries.

The famous "Little" lemon grove at Uplands has recently been sold. This is the grove that for two or three years netted its owner approximately $1000 an acre.

The fight between the ranchers of El Modena and the Irvine Water Company is being pushed by the ranchers combining and putting up a big purse to meet the expenses of the suit.

Newt C. Smith of Pasadena has bought land east of Hemet and has erected a barn and a large lath-house, where he will grow ornamental shrubbery and flowers for his Pasadena store.

The output of olives from California in a normal year is 7500 tons. This is pretty evenly divided between Northern and Southern California, the Northern part producing slightly more than half.

The packing-house of the Heber Melon Shipping Association was burned to the ground, while under construction, recently. This caused some delay in getting out the earlier shipments.

Riverside fruit growers are giving a liberal roast to a Redlands fruit-shipping concern, because of alleged forwarding of circulars, in which Riverside fruit was spoken of in a way to decry that fruit.

Some oranges delivered to packing houses have been thrown out on the account of injury to the ripened fruit by cutworms. It is claimed that one ranch at San Dimas had over 1500 boxes rejected because of this trouble.

The Cucamonga Vineyard Company is suing the San Antonio Water Company to prevent Ontario from pumping water from the Cucamonga springs for its domestic supply. This is an old-time suit of years' standing.

Colorado desert expects to yield about 1000 cars of cantaloupes this season; four years ago the same section yielded a great number of driving sand dunes. This change comes from hard work and the application of water.

A new department has been added to the State Citrus Experiment Station, at Riverside, by the addition of Mr. E. B. Babcock to the working force. Mr. Babcock's experiments will be confined principally to citrus fruit products' experiments; he will work in conjunction with J. W. Mills.

Northern California

AGRICULTURE.

A freak chicken, with four legs, has been brought forth at Porterville.

New artesian wells are being developed in the farming lands about Athlone.

Yuba county reports light yield of the hay crop, which is now being gathered.

Santa Clara County Grange met at Cupertino on the 18th and held an important session.

The Mardis ranch, near Porterville, was recently purchased by J. T. Hood, a banker of Arizona.

Exeter is receiving some fine horses and mules shipped in from stock ranches of the East.

Wheatland is a great hay center; hundreds of tons being shipped from Wheatland each year.

The California Experiment Station, at Berkeley, has a new sweet potato, for which much merit is claimed.

A petition has been presented for the formation of a new levy district in the northern part of Sutter county.

R. E. Laws, a rancher near Turlock, has constructed a sweet potato planter, which it is claimed is a great success.

Oakdale has 1600 acres of peas under cultivation and expects to ship 269 car loads of peas from that little town.

The trustees of reclamation district No. 70, in Sutter county, have a big shovel dredge at work strengthening the levies.

The Exeter Sun reports that some standing hay in that section may be burned off because of lack of labor to aid in its harvest.

The Big Meadows of Plumas county is the gathering place for many farmers who wish to take on outing in a restful place.

The Happy Valley Land and Water Company has fixed its water rates to irrigators for the coming year at the rate of 18 cents an inch.

The Lindsay Gazete carries an advertisement for a farmer who offers to sell his standing oats, barley and wheat at 75 cents an acre.

The floods destroyed this year's crop on over a thousand acres of asparagus land in the delta of the San Joaquin and Sacramento Rivers.

The fame of the Petaluma poultry industry has drawn from New Zealand several investigators, who are there looking into its methods of work.

Yuba county is having a serious time harvesting its hay crop, owing to teams and men being employed in extending the railway lines of that section.

Prof. Loughridge, of the State University, is analyzing the soil in the neighborhood of Exeter, and says the mechanical condition of the soil is of the best.

The papers in the San Joaquin Valley are, some of them, referring to the value of Lippia repens as a lawn builder and for holding up the banks of levies.

One of the features of the State Farm at Davisville is the live stock amphitheater, which is expected to afford meeting place for various live-stock organizations.

Woodland, Yolo county, is rapidly becoming a favorite field for breeders of fine horses. It is said to offer the best conditions for fine horse breeding of any section in the State.

Six hundred acres of bottom land below Yuba City have been leased to a Marysville company for the establishment of a fine new dairy. The company already has 200 cows in hand.

After experimenting with a small planting of hemp in the Sacramento Valley, it is now predicted that a large acreage will be planted another year, and some of the more hopeful ones of that section are looking for a linen factory in the near future.

HORTICULTURE.

Ceres is working for a new experiment station.

Dropping of pears is reported in many sections.

San Joaquin county reports a good crop of cherries.

Tehama is oiling the streets and planting shade trees.

New wells are being sunk in Zante Heights Tract, near Porterville.

A ton a day is claimed to be the output of strawberries from Turlock.

Modesto News reports two grape cuttings with six feet growth in six weeks.

Newcastle reports its fruit crop to be 100 per cent. better than it was last year.

Happy Valley, near Anderson, Shasta county, reports a big crop of peaches.

The Raisin Association and the Pacific Coast Seeded Raisin Company have disbanded.

The supervisors of Merced county have fixed the water rate at $1.65 for the coming year.

Ceres has an improvement club thoroughly alive to the advantages of a clean community.

The Sutter County Farmer reports an average fruit crop in the neighborhood of Yuba City.

Sonoma county small-fruit growers are receiving $50 per ton from canneries for blackberries.

Roseville, true to its name, claims to be the home of some of the most beautiful roses in California.

Globe, an orange producing section near Porterville, has shipped its last car of oranges for the season.

The Kermen News appeals for the planting more extensively of strawberries and other garden fruits in that section.

The water in the Pearson district is receding very slowly and will prevent some of the farming lands from being used.

A severe thunder shower stuck the community of Woodland last week, but more good than damage is claimed to be the result.

The citizens of Campbell are organizing for civic improvement and the placing of the roadways of their community in better shape.

The Butte county canal will be repaired from the damages of the storm last winter, so as to deliver water to irrigators by the first of June.

Modesto News is urging its Board of Trade to make an exhibit at the National Irrigation Congress, to convene in Sacramento in September.

Eight cents per pound is offered for dried peaches at Yuba City. A prediction is made that ten cents will prevail before the end of the season.

The Exeter Sun says fruit prospects in the vicinity never looked better; peach trees are loaded and promise of full crop; grape vines also promise large crop.

Oroville, with a hard-working improvement association, is planning for better roads, cleaner streets, shade trees, and other features that go with an up-to-date community.

Prof. Quayle, specialist of viticulture of the State University, has done some work in the Lodi section hoping to offer relief from the depredations of the vine-hopper.

The Valencia harvest at Lindsay is now on. It is reported that it will aggregate about 100 cars. Lindsay is practically the only Valencia shipping section north of Tehachepi.

The Board of Directors of the Turlock irrigation district met at Ceres and decided on purchasing a new dredger and making improvements on the system. The dredger will cost about $5000.

The cool spring weather has caused the snows to melt so gradualily that but little high water has prevailed along the San Joaquin and its tributaries; it has also held back the larger supply for later irrigating season.

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

Buy the World's Famous Egg Food No. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Haphazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultry men who have used these machines have supreme confidence in their ability to hatch and breed. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for the greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. Filcher, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

Petaluma Incubator Co.

Main Office and Factory, Petaluma, Cal., Box F.
Los Angeles, 505 South Main Street.
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Lincoln Avenue Poultry Yards

Successors to
Capt. E. Pryce Mitchell

Mitchell's White Leghorns Exclusively

Carl C. Curtis, Owner Lincoln Ave. and Ventura St., Pasadena, Cal.
Circular for the Asking (Altadena Cars)

200-250 Egg Fowls | **WHITE WYANDOTTES** | Always Win

Eggs and Stock Half Price for May

36-Page Catalog Free

CAPITOL AVENUE POULTRY FARM

A. L. R. MANTZ **Rural 21, Box 98k** **SAN JOSE, CAL.**

Beef, Blood and Bone Will Make Your Hens Lay

This is not a medicine but a high grade nitrogenous food. Write for free booklet, "How to make Hens Lay." Our Poultry Foods are sold by all local dealers and manufactured solely by

The Pacific Guano and Fertilizer Co.

Also Pioneer Manufacturers of *High Grade Fertilizers.* **Indiana and Yolo Sts., San Francisco, Cal.**
Write for our free booklet, "Farmer's Friend." Valuable to all farmers and ranchers.

Bemis Plymouth Rocks

Barred and White

***Prizes Won at Alameda County Poultry Association Show, Oakland, 1907*—22 Regular Prizes and 8 Silver Cups. Can furnish best birds and eggs at reasonable prices. No incubators lots furnished**

Mrs. Florence E. Bemis, 1757 19th Ave., Oakland, Cal.

Chicks Just Hatched

We ship them everywhere. Pure Bred White Leghorn Chicks from the Best Egg Producers in the United States

CALIFORNIA INCUBATOR CO., MAXWELL, MAY 27, 1906.

Gentlemen—The little chicks arrived in perfect condition. It is very remarkable that 600 little fellows would come so far and being so long on the way without the loss of a single one, but it is an undisputed fact that such was the case. We are thinking of getting a few more providing we can get them right away. Answer by return mail. Yours truly, J. F. CAMPBELL.

CALIFORNIA INCUBATOR CO., 907 Washington St., Petaluma, Cal.

Black Minorcas Exclusively

Our Minorcas excel in size and egg production. All prizes at the late Los Angeles Show were awarded our birds. Stock and eggs for sale. Send for our new illustrated catalogue.

Perham & Wheeler, R. F. D. No. 123, Lordsburg, Cal.

Profit in the Poultry Yard

By FRANK H. THOMAS, Los Angeles, California

THE BANTAM FOWL.

THE breeding of bantams is often looked upon as a waste of time, energy, and money, as most people look at poultry breeding or poultry culture as a cold-blooded, dollars and cents proposition, and only keep poultry from the good that they receive from it, never stopping to consider the beauty of an even colored flock of thoroughbred fowls.

The art of bantam breeding (for we consider one, who by selecting, mating, and breeding can fix color and type, just as much of an artist as one who takes a brush and produces the same on canvas) is as interesting, profitable, educative, noble, and refining as any other art. Suppose we take up agriculture. The growing of beans, potatoes, and cabbage is not considered much fun, and one tires very quickly of the constant grind, of the dull monotony of straight rows, with little variety of color.

Let us come into the flower-garden and try our hand at roses, violets, or chrysanthemums, and we find the work much more difficult, yet how much more we enjoy our work; if we meet with difficulties, it only stirs us to greater care and study. Just so with the breeding of bantams, they are the flowers of poultry culture.

Money in Them.

Bantams have, from a monetary standpoint, all the commercial characteristics of the large bird except in size, and this is offset by quality and flavor. They cost less for feed and give a greater yield of eggs in proportion to the amount of food consumed than the larger breeds.

We find more bantams bred by the fancier and the city poultry breeder. This should not be; the conditions on a small lot are not, as a rule, so favorable for the raising of these little beauties as the larger ranch or farm.

We believe this line of poultry culture should be taken up by the market poultry-man as an excuse for getting his boy or girl interested in poultry; but by all means get good, standard bred birds of some popular variety, as they can be sold much more readily than common stock. Where you will sell mongrels from 50 cents to 75 cents per pair, you can sell thoroughbreds from $3.00 to $25.00 per pair and eggs from $2.00, $3.00, and $5.00 per dozen. A few of thoroughbred, well-mated bantams give tone to any poultry yard.

Varieties of Bantams.

There are a number of varieties, perhaps fifty all told; nearly all the larger breeds have their counterparts in a bantam! Most any variety will prove profitable and interesting to breed, and many varieties will be found on the Coast. At the late Los Angeles shows, there were over one hundred and seventy-five of these little pets exhibited and were the attraction of the show, and many good sales were made. The writer has in mind several large breeders of these pets who have added them simply because of their beauty.

Perhaps the oldest varity of bantams is the game, although there has been a great change of shape and carriage in this variety of late years. The exhibition game bantam of today reminds one very much of a jack-snipe in appearance.

Another odd breed is the Japanese, of which there are several varieties. We know the patience and time the Japanese give in anything they undertake; we are told that they will spend a greater part of their life in improving some particular flower. The Japanese bantam is a very queer fowl. History tells us that the shape was produced by taking a bird and confining it in odd-shaped boxes which compelled it to grow to suit their fancy. After fowls are thus confined and the desired shape is produced, they are very closely inbred until the shape is fixed.

One of the most beautiful breeds of bantams is the Sebright, comprising the Golden and Silver. This breed was originated over one hundred years ago by Sir John Sebright, and is the only fowl bred to-day, either large or small, with feathering exactly the same on both male and female. When we consider this, and how true they breed, we can realize to some extent the amount of hard work and study that has been done to perfect them.

The Goldens are a rich golden color with each feather laced with a narrow lacing of glossy black. In silvers, the ground color is a silver white, each feather evenly laced with a narrow lacing of rich, glossy black. Each should have a bright red rose comb, bay eye, and slaty legs; standard weight of cocks is twenty-six ounces; cockerels, twenty-two ounces; hens, twenty-two ounces; pullets, twenty ounces. The Sebrights bear confinment well, yet enjoy their freedom as well or better than the larger birds, and will roam a long way from home if given an opportunity. They are good layers and their chicks are quite strong and hardy, but care should be taken for the first four weeks.

The Cochin bantams is another popular variety, especially the Buffs, and in our mild climate of the Pacific coast are being used a good deal for hatching pheasant eggs, as phesants are not good setters, and the Cochin bantams are very faithful and excellent mothers.

There are many other popular varieties of these little pets that we would like to mention, but space forbids.

We hope the breeding of bantams will be taken up by many of our readers, and we are sure that those who try it will be well rewarded for their efforts.

AN EASTERN POULTRYMAN IN CALIFORNIA.

The Cultivator has a letter from Miller Purvis, editor of "Poultry," a beautiful monthly magazine devoted to poultry industry, published at Peotom, Ill., but now visiting his California ranch at Olinda, Shasta county. In it he expresses his satisfaction in California. He says:

"I came here three weeks ago and found the Cultivator a regular visitor and a gladly welcomed one. I had never been here before, having bought the ranch through a relative, and for that reason did not understand how valuable a publication the Cultivator is for Californian agriculturists.

"I am delighted with the country here in Shasta county. The fruit crops promise to be large. On Sunshine ranch the peaches, nectarines, pears and grapes are loaded. The almonds bloomed at the wrong time, and will not fruit this year. We have a few

cherry trees, which are loaded with fruit, and our 'truck patch' is growing finely.

I am preparing to add poultry and pigeons to the list of things produced here, and expect to have one of the show places of California before I call Sunshine Ranch complete.

We are preparing to experiment in growing fruits on the hillsides without irrigation. I have dug into the sides of the gulches and believe olives, grapes and other fruits can be grown with success, without using more water than the rains furnish. The plan I shall follow is to dig a hole of liberal size and depth, filling it to within eighteen inches of the top with the cobblestones that are so plentiful here. Over these I shall put the top soil and set the trees. I figure the holes will fill with water during the winter rains, and that the impervious clay will hold the water a long time, allowing the roots to reach down to it.

"Strawberries are a large crop here, but there are not many acres yet used for this fruit. The crop this year will probably run to 400 crates to the acre. Growers are getting from $1.25 to $1.50 per crate of fifteen-pound boxes at Redding and Anderson.

"I have just bought an incubator and expect to begin hatching at once, as it seems to me that poultry breeding must be very profitable in this country."

INCUBATING WITH HENS.

Circumstances sometimes make it necessary to raise chickens by the aid of the hen. While the Maine station does not like this method, it has practiced it, and at times has had as many as a hundred setting hens ranged in nests along the side of a room in two tiers. A recent tie-up in a barn was used as an incubating room and a platform was erected along the side next to the barn floor. The platform was raised three feet above the floor, was two and a half feet wide and fifty feet in length.

This platform was divided into fifty little stalls, each a foot wide, two feet long and one foot high. This left a wall six inches wide along the front of the nests for the hens to light upon when they flew up from the floor to take their places upon the nests. Each nest had a door made of lath at the front so as to afford ventilation. Each door was hinged at the bottom and turned outward. Across the center of each nest a low partition was placed so that the material from which the nest was made could be kept in the rear end.

For early spring use paper was put in the nest, then upon the paper an inch or two of dry earth was placed, and on top of this the nest proper was made of soft hay. At such periods as half a dozen or so hens showed a disposition to brood they were taken in from the henhouse and put on nests, each nest having a dummy egg in it. The covers were then shut up, whereat the hens within would appear perfectly content.

After a day or two thirteen eggs were placed under each hen and then the real business of the incubation began. Every morning as soon as it was light the setting hens were let out. They would leave their nests on their own accord, go out around, scratch, drink and pick up such food as they appeared to desire. Fifteen minutes at this was enough, and then the old hens would hurry back to their nests without the least urging.

If, during the afternoon during the early stages of the brooding, any hen came off the nest and showed a desire to get out she was liberated and another and more faithful brooder put in her place.

Here may be seen the efficiency of the double nest, because it gives the discouraged hen an opportunity to show her discontent without standing on her eggs and very likely breaking them.

There are many advantages possessed by the closed room in which to confine sitting hens. The hens are more easily managed and do not need to be watched so narrowly as when left to select nests for themselves, or when sitting in a room in company with laying hens. A room twelve feet square would be sufficient for any ordinary number of sitters, say fifty for instance. In fact the Maine Experiment Station would not recommend sitting hens for anyone excepting the small operator.

For the accommodation of a hen with chicks a close coop about thirty inches square is found the most feasible. The coop should have a hinged roof and a movable floor made in two parts so that it may be lifted out and cleaned; and the cleaning should be done at least once a day. This coop has a wire-covered yard attached to it on the south side. The yard should be four by five feet on the ground, and a foot and a half high. The frame of the yard may be made of 1x3 inch stuff and should be securely fastened to the coop. The wire on the sides should be of one-inch meshes, but that with two-inch meshes will do for the top.

A small run will do for these broods for the first few weeks; but as the chicks grow they will in time need more commodious quarters. Then the outer end of the run may be lifted sufficiently high for the chicks to run out and in at will. Such a coop will accommodate from 15 to 20 chicks until They pass beyond the brooding age. Then several broods may be combined and put in a portable house on a grassy range.

In all cases where a hen is put to hatch her own eggs or to brood another's chicks great care should be taken to keep the lice in check; for if ever these pests obtain a foothold they will ruin the birds. The free use of insect powder upon the hen and the careful working of the powder through the feathers to the skin is one of the most effective methods of destroying lice. Grease or oil applied to the head of the hen is effective in that part, but care should be exercised as to applying too liberally, especially in damp weather. The feeding of chicks raised by this method is about the same as those raised in brooders.—Maine Experiment Station Bulletin.

TRUTH ABOUT THE COW.

A worthy squire had a cow that always kicked and reared when milked. He decided to get rid of it, and, calling one of his farm hands, told him to take it to the market.

"Sell the brute," he said, "but mind you, tell no lies. I've been unlucky in my purchase, but that's no reason why I should deceive others."

Two hours later the man returned from market with a larger sum than the squire expected. "I'm sure you lied about that cow," he said.

"Not a bit of it," replied the man; "every time I was asked if she was a good milker, I simply said: 'You'll get dead tired of milking before you get all her milk."—[Exchange.

Don't feed the little chicks anything for the first twenty-four hours. Then feed them dry

West Coast Chick Feed

Bright, pure, clean, made of the finest grains, seeds, meat, etc., in just the right proportion to make a full, rightly-balanced ration. They like it, too, and eat it up clean, for it contains no waste whatever. It keeps them healthy and it will make them feather faster, grow faster and larger than will any other feed. They need nothing else until over half-grown. If your dealer does not keep it, and will not get it, send $3.35 for 100 lbs., freight prepaid by us to any point in California.

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West Coast Poultry Tonic

will do it sure. It is one of the greatest cures for ROUP and all kinds of colds.

Hen Fruit Pays—if you want more, feed

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That highly nitrogenous poultry food, rich in protein, to keep the poultry in good health, and enable the hens to convert the surplus aliment into eggs.

Or if you want to make your own Egg Food use

EGG-MORE

which contains all the ingredients of West Coast Egg Food except the grains. If you are distant from Los Angeles it will be better for you to buy your grains at home, and add Egg-More as directed, which with good grains makes a perfectly balanced ration for all fowls over half grown and especially for the hens that should lay.

West Coast Lice Killer and Killamite (powder)

are most effective pest destroyers. Nearly all the diseases of poultry may be attributed to lice and mites. Don't let them get the best of you. Get the best of them. And did you know that Killamite is just as good for killing plant insects without harm to the plant. Testimonials of public gardeners and others. Try it on your roses. 25 cents and 50 cents sifting cans, express prepaid if your dealer won't get it for you.

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are the best made and, quality considered, the cheapest. If your dealer doesn't sell them, send to us. Booklet free. Send us names of 12 persons keeping poultry and we will send you free "The Poultry Manual" by those high authorities F. L. Sewell and Ida E. Tilson, profusely illustrated.

This is a photo of 201 Gophers killed in one day on a 10-acre field with one bottle of

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and will prepay the freight to any point west of the Rockies. Not more than 50 lbs. to each one, and we reserve the right to withdraw this offer without further notice. No cheap premiums, no gaudily colored pictures, but a legitimate business offer to induce a trail, hoping to add many steady customers. Feeling sure that a trial of the goods is the very best advertising.

No strings to this offer. Just send us your name, the freight station to whch you want the goods shipped, mention this paper, and we will do the rest. Send money order or check with your order, and if every thing is not exactly as represented your money will be refunded.

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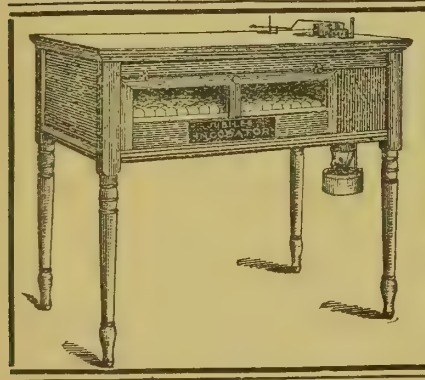
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Same with our new Pearl Oyster Shell, common sense again, the first of its kind on the market. Order some right away.
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All our Poultry Products are made on common sense lines. No untried or hair splitting theories go with the A. C. W.
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RHODE ISLAND REDS.

Poultry keepers are turning their attention to Rhode Island Reds. There are some very practical reasons for this, one of which is that they are a double purpose fowl. They are good layers and they are also a fine table bird.

The experience of a poultryman, given in the Poultry Advocate, demonstrates the utility of the Rhode Island Red as a bird for general purpose. This man writes:

"The Rhode Island Reds are the practical poultryman's fowl, they are a new breed to a great many fanciers, although they have been bred in the state of Rhode Island for about forty years. In 1905 the Reds were shown at the Ontario, Guelph, for the first time. There not being a class for Reds, they were shown in A. O. V., and if I am not mistaken only six Reds were shown. At the Ontario, Guelph, 1906, there was a class of 64 Reds, which goes to show that Reds are coming to the front very fast and growing popular. Why? Simply because they are a practical fowl, very hardy and vigorous, and are noted as great winter layers. Their eggs will hatch a large per centage of strong chicks at any season of the year, and I believe they are the coming fowl for the farmer to raise.'"

KEEPING THINGS CLEAN.

Too much cannot be said about the cleanliness of the poultry house and lots at this time of the year. The house should be cleaned at least once each week. If things are arranged properly the task need not be a very difficult one.

Every sanitary hen house should have movable roosts. The ladder and roosting poles are attached to a frame which is detached from the floor and the device can be moved at will, either when the house is being cleaned or the keeper is fighting pests. Nests may be so attached to this roost that they too can be removed from the building and disinfected. When the old-style roost has so many cracks and crevices in which the insect pests can hide, the efforts to exterminate them are not effective.

In addition to the movable roosts, the poultry raiser should have a spray pump to effectively reach every part of the interior of the house which may be infested with mites. If fruit and flowers are raised in connection with poultry, a hand sprayer is needed nearly every month in the year.

VALUE OF HEN MANURE.

Some one has estimated that the manure from one hundred hens carefully secured and applied to concentrated crops as truck or fruit will pay for the food consumed aside from the waste food picked up about the farm. No doubt this statement is true, though most poultrymen offset manure against care of fowls and figure in the cost of food under expense. The value of hen manure in replacing commercial fertilizers which would otherwise have to be purchased is considerable, as shown in the following tables.

One ton fresh hen manure contains
Water, 1180 pounds.
Nitrogen, 28 lbs., at 17½c.....$4.90
Phosphoric acid, 19.8 lbs. at 6c..$1.19
Potash, 6.4 lbs., at 6c..... .90
Total value $6.47

One ton dried hen manure contains
Water, 149 lbs.
Nitrogen, 36.4 lbs., at 17½c....$6.37
Phosphoric acid, 44.2 lbs., at 6c.. 2.65
Potash, 22.2 lbs., at 6c..... 1.33
Total value $10.33
—Successful Farming.

HARD BOILED.

We find in the experience of almost all writers of poultry literature, they say, "Feed the young chicks hard boiled eggs." This may be all right, and the chicks may thrive on it, if the eggs are properly boiled. There is scarcely anything as indigestible as a hard boiled egg unless boiled for about thirty minutes. We have never yet been able to see the theory of hard boiled eggs for young chickens, any more than of hard boiled eggs for babies. The yolk of the egg is absorbed by the young chick just prior to exit from the shell and serves as feed for it for from twenty-four to thirty-six hours, and if you must feed young chickens eggs, feed them raw, as this is the more natural food. The first fluid that comes from a cow's udder after the birth of a calf is not milk, but a watery substance peculiarly adapted to the calf's stomach, and we never hear of a dairyman feeding the calf hard boiled milk for its first feed, and we believe one is as reasonable as the other.

Breeding fowls should be kept in a condition neither too fat nor too lean, and they should be fed on a variety of ground grain with plenty of bulky proteids. They should have access to sharp gravel at all times, calcareous matter for egg-shells, charcoal to purify the crop and stomach and aid in digestion, with plenty of pure water to drink at all times, and with plenty of exercise.

EGG INFORMATION.

Duck eggs seem to have the thinnest shells, being about 10.6 per cent. of the weight of the egg.

The average of thirty-four samples of hens' eggs gave 11.2 per cent for shell.

Turkey eggs ran slightly above hen eggs in this respect, having an average of 11.4 per cent. of the whole weight.

The shells of goose eggs average 12.8 per cent. of all.

Guinea fowl eggs should be unusually strong, as their shells form 14.4 per cent. of their weight.

The whites of the eggs in proportion to their total weight ran: Goose, 52.6; duck, 43.6; guinea, 53.6; turkey, 56.5.

The proportion of yolk to the whole egg ran: Guinea fowl, 32; duck, 33; goose, 34.6; turkey, 30.1.

Fowls need meat. Experience has proven that nothing will revive dormant hens as will a little cut meat or green bone. Get what the butchers call beef-scraps, and if you have no bone-cutter, cut them up with a sharp hatchet or ax. In some places these scraps can be had for the mere asking, while some butchers ask one cent a pound. If some small animal is accidently killed and is not diseased, give it to the hens, and they will surprice you in the way of shelling out eggs. Lambs and calves that are born dead or are killed at birth, make cellent food for hens. Hens fed on meat lay so well that they will hardly sit when you want them to. In France the large poultry-plants buy old horses and feed the flesh to their laying hens, and they find it very profitable.

Never be deceived and feed your hens because they run after you every time you appear, as it is due to the education you have given them, being only a habit. Make them work; an idle, lazy hen wil not lay eggs. When you notice her scratching and foraging you will find an egg in her nest.

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Seed Ordering Time
Better have seeds at hand for planting time—saves delay

WRITE FOR SEED CATALOG

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MELONS

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The Ornamental Garden

By ERNEST BRAUNTON

THE WINDMILL PALM.

FOR general planting throughout the Pacific Coast no palm exceeds in value the Wind-mill, or Chusan, palm (Thachyearpus excelsus). With us it is perfectly hardy in any locality, even where snow falls freely each winter and the temperature occasionally drops 18 or 20 degrees below freezing. It thrives in England as far north as London, and is quite common in the milder parts of Ireland. It is native to China, India, and Japan; in the former country reaching as far north as Napong.

Aside from its hardiness regarding cold, it withstands more rough treatment, in every way, than any other species; it is one of the easiest to grow, as it thrives in any soil, and after being once established does not seem to note the water supply except in the amount of growth. Its leaf stems are short and wiry, the leaf proper tough and leathery, not easily damaged by the winds even where the more common species have their leaves whipped into ribbons.

Though one of the most ornamental (perhaps the best) of all fan palms, it is also very useful, especially at home, where it is put to many uses. In China and Japan the fibrous covering of the trunk is mixed with plaster, as we use hair, while the leaves are in great demand for plaiting palm hats. It is said that cordage prepared from the leaves will not decay in water. Its use as an ornamental is sometimes objected to by reason of its growth being somewhat slow, yet it is more responsive to fertilizers and a sufficiency of water than any of the fan-leaved section, so that its progress lies largely in the hands of the grower. In height it is not classed with the giants of the family, as it but seldom attains to more than thirty feet.

This genus (Trachyearpus) contains three other species, and one of these has the same native range as our subject, the other two hailing from the Himalayan region. The four species are strangely divided in appearance, one species in each range having the ends of the leaves quite pendulous, while the other two have the leaf-tips straight. The two from the Himalayas have trunks richly covered with the old leaf-sheaths and fiber, while the others have beautiful smooth, polished trunks. Both in the United States and Europe they seem to mix freely, and the intermediate types are so common that the specific differences are well-nigh lost. Those desirous of obtaining this palm from nurserymen will generally find it for sale under the name of Chamoerops excelsa, as it closely resembles that family.

FLOWERING EUCALYPTS.

Our most showy eucalypt when in bloom is the scarlet flowering gum (Eucalyptus ficifolia,) which always gives some shade of crimson or scarlet. We also have a very showy white-flowered species (Eucalyptus calophylla,) which is too little used. It is more handsome than the "robusta," so much used as a street tree, and is, in fact, superior in every way. One who wishes to experiment with producing a pleasing variety of colors and shades, in the flowers of these trees, may find a very enjoyable and interesting diversion by planting the two first named trees together harvesting and planting the seed and noting the result. He will find in the second generation every shade from white to crimson, some of them vying with the rose in beauty of coloring.

CYCLAMEN.

Everyone having a shady corner in the garden, with a light, well-drained soil, should grow a few cyclamen, "shooting stars," or "Persian violets," as they are variously called. Except for a short season during the heated spell they bloom more continuously than any other bulbous plants. In many gardens these exquisite little flowers may be seen in abundance, but some make the mistake of planting the bulb or corm too deeply; one-half of it should remain above the soil. Water constantly, yet keep good drainage else the bulbs easily rot. The colors range from white to a rich purple, often beautifully striped or variegated.

FOUR REMEDIES FOR APHIS.

1. Dissolve 1 pound of whale-oil soap (or any good fish-oil soap) in 8 gallons of water. Spray the lice thoroughly or dip the parts containing the lice into the liquid.

2. Steep 1 pound of tobacco stems, or good, clean tobacco dust, in 4 gallons of water for two hours; allow to cool, and apply as in preceeding case.

3. Dissolve 1 pound of soap in 1 gallon of boiling water; while boiling hot add two gallons of kerosene (away from the fire) and emulsify the whole by pumping it violently, through a spraying nozzle, back into the vessel containing it for a few minutes. This will make a stock solution sufficient for 30 gallons of spray matteial. Apply as in No. 1 above.

4. House plants may be dusted freely several times, two or three days apart, with Pyrethrum, commonly sold as Buhack, or insect powder.

Seed-growing, while one of the most scientific of all branches of horticulture or floriculture, is also one of the most expensive. A man must not be naturally inclined to any branch of this profession, but he must be thoroughly experienced before he can safely venture into this difficult field. The bulk of the vegetable seeds raised in California consist of salsify, lettuce, peas, beans, onions and beets, while in flowers sweet peas, verbenas, asters, poppies and hollyhocks are staple products.

The great California seed belt begins in the Santa Clara valley, about fifty miles southeast of San Francisco. In all its branches the seed industry in California gives steady employment to 3,000 persons. The wages of skilled or scientific help are very high indeed. Some of the most expert men in the seed line are employed in California, and the wages go all the way down to the seed-picker, who is able to earn from $1.35 to $2 a day.

They change their sky, not their affections who cross the sea.

The pitcher that goes often to the well is sure to be broke at last.

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Chas. Howard, 2121 Park Ave. Riverside, California

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

Bugs and Peanuts.

My cabbage plants are being ruined by plant lice. Am using sulphur on them, but they seem to thrive on it. Have to pick each one off separately and kill it with a club. How often should peanuts be irrigated?.

What is best to use on melon vines for striped beetle? Last year used "Lee's Insect Powder," but it killed all the large leaves, so made my melons late.—S. M. O.

The only thing that you can do with your cabbage lice is to spray with a whale oil soap mixture. The plant lice are sucking-insects and anything you put on the surface is not eaten by them. The kerosene emulsion is the easiest to make and is effective. Take three ounces of soap, three pints of sour milk or water and three pints of kerosene. Heat and pump through a hand pump for about fifteen minutes. Make this up to fifteen gallons and spray it on the bugs.

It is dangerous to irrigate peanuts after they begin to vine when the land is heavy enough to bake. The land should be kept well cultivated till planting time and should retain the moisture clear through the season.

Use a dust spray of Paris green for the striped beetles.—J. W. M.

Leaf Curl.

Inclosed with this are a few leaves taken from peach trees set last year.—L. D. Holtzclow, Greenfield.

Your trees have the peach Leaf Curl and the trees should be sprayed with Bordeaux mixture during the winter. That will stop the trouble.—J. W. M.

Lime for Oranges.

I would like to know how much lime, air slacked, to use on my orange grove? It is hard clay land and does not take water well. Also how much should I use on nursery stock, peaches and almonds.—Subscriber, Orland.

Try about 500 pounds per acre. If it proves to be of much benefit, follow it up when you think the land requires it again. You might try double that amount on a fraction of an acre, that is make the application equal to 1000 pounds per acre.

Remember that lime adds no fertility to the soil, simply makes heavy soil easier to handle and makes the elements more available, so that fertilizers must be used with it. This is especially true of potash.—J. W. M.

Gypsum for Orange Trees.

I have a young orange orchard planted last spring and I have some gypsum that I formerly bought for sowing on alfalfa. Will the gypsum be good to sow around the roots of the young trees?—J. F. H., Lindsay.

The gypsum will not injure your trees and will perhaps do as much good as lime would. Ten pounds per tree would be about the right amount. First, used in your stable as an absorbent and then taken to the orchard in the manure, will be a still better way of getting the fullest benefit from gypsum.

Flavor of Melons.

Will you please state whether pumpkins and water melons will mix, Some people say the fruit will mix the first year they are planted together, and others say it is the seed that will mix. C. V., Acampo.

Your question is one on which there is diversity of opinion. Botanists claiming that the flavor of melons is not affected by nearness to pumpkins or cucumbers, but that the seed would be of no value for planting. But as a rule the practical melon grower prefers to grow his melons away from the plants mentioned, under the claim that the flavor of the fruit will be very materially lowered.

Remedy for Aphis.

Will you please tell me how to get rid of a small green louse which has come upon nearly everything in my vegetable garden. I have sprayed with a solution of Paris green; 1 teaspoonful to 2 gallons of water. This does some good, but hurts the leaves of the beans.

I like your paper very much indeed; it is both useful and entertaining; I consider it the best of all the many agricultural papers I have ever seen.—E. D., Orosi.

The small louse of which you speak is doubtless the aphis, or plant louse, which would not be affected in any way by the Paris green which you used. The slight advantage which you secured by spraying with the Paris green was only by the knocking off of the insect from the vine and its inability to crawl back on it to do the plant any injury. In another column of this issue you will find an article "Four remedies for Aphis," also another, "Kerosene Emulsion" which is good.

Bear in mind, to understand spraying and to do it intelligently, you should know the life habit of the insect which you wish to destroy. One class of insects are supplied with jaws, or manibles, and eat the leaves; another class, of which the aphis is a member, do not eat the plant tissue at all, but by the use of their sucking tube, which is inserted into the plant tissue, the life-giving juices of the plant are sucked out. Hence you will see they must be destroyed by an application to their bodies, as they will never be poisoned by any Paris green application. The remedies referred to will give you relief, or even the use of the hose, where you have water under pressure, will knock them off the plants and give temporary relief.

CARE OF "IN FOAL" MARES.

Attention to the condition of in-foal mares should now be the care of every breeder, but by adopting the expression attention is not intended to imply that the animals should be overfed any more than that they should be starved. The great object to have in view is to keep the brood mare in such a state of health that whilst she is able to produce a sufficient amount of nourishment for her unborn foal she does not become too fat herself. An over-fat mare is apt to slip her foal, or else have an unnecessarily bad time of it when foaling, and hence the necessity that exists for watching her condition, and attending to the requirements of each mare as they arise. Mares of liberty can, of course, obtain a sufficient amount of exercise, but those confined in boxes ought to be taken out daily. Indeed, there is no objection to working an in-foal mare up to within a week or so of her foaling, provided, of course, that she is taken along slowly and not asked to do too much, as over-exertion may lead to serious results. It is best to give all in-foal mares a little grain towards the end of their time, but for the first few months, if she is out on good land, the grass will supply her with quite sufficient nourishment. Should the mare be in a box it is necessary that the rule for constant feeding should be rigidly enforced, for a long abstinence from food is calculated to upset her.—The Horseman.

Ed Schwacofer of Hemet took $1100 worth of potatoes off 6 acres without any fertilizer, last spring. He, with a great many other ranchers on the Hemet tract are using fertilizer on their potato ground this spring, and hope to double the crops. Never have potatoes made a better stand than this

San Fernando hay buyers are active, or would be, if they could offer the price, which farmers are demanding; most of them holding for $15 per ton for the new crop.

FRIENDS OF GARDENERS.

The experts of the Department of Agriculture have discovered a new use for skunks, also for toads. As a grasshopper exterminator they have no equal.

By many it has been generally supposed that the toad had no excuse at all for living, and that the skunk, despised and shunned by society, was valuable only to the extent of what his pelt would bring on the market or in the lard that his fat would produce.

No greater mistake could have been made. Barnyard fowls, blackbirds and meadowlarks must take back seats. Even the red-headed woodpecker is out of the running.

This information would be received with great joy in Kansas, North Missouri and wherever grasshoppers devastate grain fields.

It is only necessary now for a farmer who has a field he wants to rid of grasshoppers, to go out and gather up a few skunks and turn them loose in the insect-infested area. This task might be delegated to the hired man. At any rate the skunks will do the rest.

"Skunks are very fond of grasshoppers and are esteemed by the Bureau of Biological Survey as the most useful of mammals," said the government experts on such matters. "They, therefore, deserve protection rather than destruction by the farmer."

TEETH OF HORSES.

In a discussion of this subject a horseman of much experience says:

Decaying teeth are not uncommon in horses. This condition is usually indicated by a fetid discharge from the nostrils or a fetid breath. In some cases difficulty is experienced in locating the diseased tooth, but when the disease has advanced to that stage in which it can be located, it must be extracted.

Wolf teeth (those small, supernumerary teeth, which appear in front of the first molars in the upper rows) are generally supposed to have an injurious effect upon the eyes. This is a mistaken idea. They seldom do any harm unless they are large and in such a position that they interfere with mastication; but being supernumerary and having no function they should be extracted. The somewhat common habit of knocking the crowns off should not be followed. They should be drawn with a pair of forceps. We repeat that sufficient attention is not given to horses' teeth, and that a dollar spent for having them dressed is usually a good investment, while a bungling job does more harm than good.

HAWAIIAN REPORT.

We acknowledge the receipt of a volume "Third Report by the Board of Agricultural Commissioners and Forestry of the Territory of Hawaii" from the Hawaii Promotion Committee.

The report has matters of interest for Californians. Amongst the reports is one from our old friend Alexander Craw, which shows that he did not escape from all the bugs in going to the islands.

The Report will be mailed on application to H. P. Wood, Secretary Promotion Committee, Honolulu, Hawaii.

The Escondido Creamery is claimed to be one of the most prosperous institutions of its kind in San Diego county.

Fullerton cabbages have advanced $3.00 a ton recently, and they are now commanding $17.00 net to the growers.

TALLERDAY SURFACE IRRIGATION PIPE

SAVES WATER, GRADING AND TIME

The **only** way to **Irrigate Alfalfa. Cheaper** than **Flumes.** This is only **one** of our **specialties.** We make **Riveted Water Pipe** in lengths of **ten feet** from **single sheets.** Let us **prove** to you that we make **Pipe** and **Tanks right.** WRITE FOR CATALOGUE.

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General Agriculture

BERMUDA GRASS IN FLORIDA.

THERE is no doubt that Bermuda grass makes an excellent pasture, perhaps it is all that is claimed for it by the Tampa Times, but there are some who prefer St. Lucie grass. This, however, is not so very different from the Bermuda, in fact it is only a sub-variety of Bermuda.

The Times has at different times devoted much space to endeavoring to install into the minds of the Florida farmers that of all the grasses indigenous to the soil of the United States, Bermuda grass is the grass best suited to Florida, and that when once sodded down it will supply in this climate grazing pastures equal to any to be found in the country, and it is, therefore, with considerable pleasure that in conversation with N. A. Callison, the manager of Spring Park, the largest and best equipped stock farm in the State, that gentleman entirely concurred with the expressions of this paper, and announced that he was rapidly planting all his pastures on the farm in this grass.

Mr. Callison stated that Bermuda would eventually become to Florida what the blue grass was to the stock regions of Kentucky and Tennessee, and that with the gradual extension of these pastures as the people began to realize their worth, the State would eventually become one of the great stock producing sections of the country.

Mr. Callison pointed out the ease with which a pasture of this kind could be produced, placing its possession within the possibilities of the poorest farmer in the State, and to the fact that it was never really killed in the coldest weather, the young shoots putting out next to the ground with the first shower after a killing frost.

Another point in favor of this grass is its ability to hold moisture, making it that much more palatable to stock, especially cattle, and this feature has probably been noticed even by those who are not connected with agriculture, but spend their lives in the towns, as a Bermuda grass lawn will hold the moisture of a heavy dew until a late hour in the day.

But Mr. Callison is not the only cattle man in the State who has finally decided that Bermuda is the grass which is needed to raise calves, pigs and colts in the State of Florida. John Moody has been planting it for some time on his farm at Brandon, and W. L. VanDuzor and other progressive stock men of that great cattle country—Osceola county—are also rapidly sodding down all their permanent pastures with this once much despised grass.

Some farmers have set up the plea that on account of its creeping nature stock which graze regularly on it devour a large quantity of sand along with the grass, with disastrous results, but this condition of affairs only prevails, according to the best authorities, where the animals are kept on too small a pasture, giving the grass no opportunity to recuperate itself. Even under these circumstances it does not become extirpated, its powers of vitality being wonderful, but at the same time it is evident that to obtain proper results from it the pasture should be divided into fields to which the stock may have access in rotation.

Furthermore, it is advised by those who have made a study of the subject, that at stated intervals it should be liberally fertilized with bone meal, which not only enables it to make a sturdy and vigorous growth, but at the same time enables it to incorporate those ingredients for the making of bone and muscle which are so essential in the food of all young and growing stock.

It is unforunately a fact that the glamour and splendor of the orange and other citrus fruit displays at the State fair attracts the attention of the majority of the visitors but to the man who is anxious to see the State of Florida built up on a solid foundation, a fine display of grass or hay will have more weight. Given a grass no country can fail to produce a living for its inhabitants, the majority of the necessities on which man depends for his existence, obtaining their direct nutrition from grass, and it is for these reasons that the Times hails with delight every stockman who is making an effort to improve the grass conditions of the State, and who is willing by experiments, no matter how small, to add his share to the upbuilding of the State.

When the railroads cease hauling baled hay from the north and west into Florida by the carload, the State will enter upon a new era of prosperity, such as she has never seen, and from present indications Bermuda grass seems to be the password by which this desirable condition is to be obtained.

TANNING A SHEEP PELT.

Sheep skins make fine robes when they are tanned in a proper manner. When the pelt is removed from the sheep it should be thoroughly salted on its flesh side and rolled up to cure, so it will not become putrescent and give off a bad odor. When it is thought best to tan it should be unrolled and the surplus salt removed; then wash the pelt in a strong soap suds and make it as pliable as possible, after which all the surplus flesh should be removed so that nothing but the skin and the wool remain. It is thought that the old-fashioned lye soap is better for this purpose than any other. This may be a matter largely of opinion, however.

When washing the pelt it should be thoroughly worked by hand or rubbed upon a washboard. When thoroughly washed and all the water removed a preparation of equal parts of pulverized alum and borax should be well rubbed in on the flesh side. The alum acts as a stayer to hold the wool fibers from coming out and the borax helps in the tanning process. These substances will be more effective when dissolved in warm water and applied in liquid form. To prevent rigidity of the skin it should be thoroughly worked by hand until it is perfectly dry.

ANNUAL MEETING.

The seventh semi-annual meeting of the Counties Committee of the California Promotion Committee will be held on Friday, June 7, 1907, at Petaluma.

The theme of the meeting will be, Forestry and Irrigation in California. Addresses will be made by men from different parts of the State, competent to treat the subject from a broad standpoint. The discussion will bring out the importance and value of forestry and irrigation to all interests, and a campaign will be inaugurated for the betterment of conditions in this regard.

It is expected that this meeting will stir up a general State interest in the National Irrigation Congress, to be held in Sacramenta in September next.

Arrangements have been made with all railroads for fare and a third for the round trip, on the receipt certificate plan. The Pacific Coast Steamship Company has also granted reduced rates.

The Burnett school, on the Monterey road, in Santa Clara, is becoming noted for the enterprise of the children in raising a beautiful flower garden.

IT'S PENNY WISE.

Policy to set out a good tree, costing good money and then let the sun burn the bark or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Manufacturing Company, 2124 Willow St., Los Angeles.

Auction

60 Fine Jersey Cows

On The J. L. Palmer Ranch at

COMPTON

Wednesday May 29th 10 a. m.

60 HEAD OF FINE JERSEYS, consisting of

30 Grade Jerseys, all milking
10 Jersey Heifers with first calf
10 Jersey Heifers to calve within 4 weeks
10 Jersey Cows now milking and soon fresh

The last 30 head are sired by RECORDER No. 8, No. 46405, he out of Brown Besser stock, the WORLD'S FAIR CHAMPION butter maker of the world

This stock is consigned to us from San Diego County, owners having other interests and disposing of their entire herd, and every animal will positively be sold to the highest bidder without limit or reserve.

This is considered one of the choice herds of San Diego County. Cows are all rich milkers, and purchasers looking for first-class Jersey Stock should not miss this opportunity.

TERMS CASH LUNCH AT NOON

Monte Verde Cattle Co. Owners

Rhoades & Rhoades

Office 730 S. Spring St. Auctioneers.

Auction Sale

16 Milk Cows 1 Bull

On the old John Brenscom Ranch 1 mile S. W. of

STUDEBAKER

On east side of the river. Take Southern Pacific train leaving Los Angeles at 8:30 a. m. to Studebaker. Teams in waiting.

MONDAY, JUNE 3RD
AT 10 A. M.

16 head First-Class Dairy Cows, all young, and in good condition, fresh and coming fresh, large milkers, Jerseys, Holsteins and Durhams.

1 Thoroughbred Durham Bull.

I am quitting the Dairy business and closing out my entire herd and will positively sell every animal without reserve or limit.

Terms: 8 months time will be given with note and approved security. Discount for cash. Free Lunch at noon.

JOHN MIES, Owner.

Rhoades & Rhoades, Aucrs.
Office 730 South Spring St.

Auction

275 Cows—Heifers—Hogs

On Carhart Ranch at Foot of Cahuenga Pass on the river, on Toluca Wagon Road, 2 miles North of

HOLLYWOOD.

FREE carriages will meet electric cars every half hour day of sale, at Hotel Hollywood corner Highland Ave.

TUESDAY MAY 28TH,
9 A. M. SHARP

100 HEAD COWS NOW MILKING, Jerseys, Holsteins and Durhams, fresh and coming fresh, young and in good condition, all fine dairy and family cows.

50 HEAD ONE AND TWO-YEAR-OLD HEIFERS AND DRY COWS.

50 HEAD CALVES AND YEARLINGS.

60 HEAD FINE HOGS AND BROOD SOWS.

4 HEAD DELIVERY WAGON HORSES.

1 SADDLE PONY.

IMPLEMENTS.

1 covered Milk Wagon, Harness, Simplex Cream Separator, Petaluma Incubator, 220-egg capacity, Brooder, Cans, Bottles Tanks, Refrigerator, Churn, Butter Mold and Worker, etc., etc.

We are retiring from the dairy business and closing out our entire herd and equipment; and will positively sell everything to the highest bidders. No reserve or limit.

For convenience of buyers, stock will be delivered to a corral in Los Angeles after sale, without charge.

TERMS: A credit of 9 months will be given on cattle, with note and approved security and 7 per cent. int. Discount for cash. Hogs and Horses sell for cash.

FREE LUNCH AT NOON.

HILL TOP DAIRY CO. Owners..
Rhoades, Reed and Rhoades,
Auctioneers
Office 730 S. Spring St.

Auction Sale

60 Fine Milk Cows

On my Ranch on Bishop Street, at the North West Corner of the old Catholic Cemetry

LOS ANGELES

One-Fourth Mile West of Buena Vista St. Take University or Garvanza Cars to Bishop St.

FRIDAY MAY 31
AT 10 A. M.

60 Head First Class Milk Cows

Jerseys, Holstein and Durhams, young and in good condition fresh and coming fresh, large rich milkers, 25 head of this stock are 2 and 3-year-old heifers with first and second calves. This herd is all of my own raising, carefully selected from milking strains, the result of 18 years careful Breeding and Culling.

1 FINE THOROUGHBRED DURHAM BULL

Having been in the Dairy business 18 years I have decided to retire and close out my entire herd. There will positively be no limit or reserve and every animal will be sold strictly on its merits. No bye bidders.

Terms: 8 months time with note and approved security. Discount for cash. Free Lunch at Noon.

A. M. NELMS, Owner.

Rhoades, Reed & Rhoades, Aucrs.
Office 730 South Spring St.

Auction Sale

45 Holstein and Durham Cows

On Marius Meyer Ranch 2 miles east of

LOS NIETOS.

Monday May 27
AT 10 A. M.

On Whittier Electric Line. 1 mile northeast of Santa Fe Springs. Take Whittier Electric cars to Los Nietos. Teams in waiting.

45 Head Fine Dairy Cows

All Holsteins and Durhams, all fresh and large milkers, large fine cattle, young and in good condition, in fact this is one of the best dairy herds in Los Angeles county.

1 Fine Holstein Bull.

I have decided to close out this entire herd and will positively sell every animal to the highest bidder without reserve or limit. Purchasers looking for first-class dairy cows should not miss this sale.

Terms Cash.

Free Lunch at noon.

MARIUS MEYER, Owner

Rhoades & Rhoades, Aucrs.
Office 730 South Spring St.

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Results count. We get them. We place our graduates in good positions. Write us.

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Stockton, California

Heald-Dixon Business College,
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614 S. Grand Ave. Los Angeles

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May be arranged so that you may travel by way of

New Orleans and the Sunset Route

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Enjoying the balmy air of the South or the cool and bracing air of the North.

Personally conducted excursions every day from Los Angeles via all routes without change to principal eastern points.

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600 S. Spring St., cor. Sixth

Southern Pacific

SURE CURE FOR PILES

ITCHING Piles produce moisture and cause itching. This form, as well as Blind, Bleeding or Protruding Piles are cured by **Dr. Bosanko's Pile Remedy.** Stops Itching and bleeding. Absorbs tumors. 50c a Jar at druggists or sent by mail. Treatise free. Write me about your case. DR. BOSANKO, Philada, Pa.

Household Department

THE OTHER FELLOW'S JOB.

There's a craze among us mortals that
is cruel hard to name,
Wheresoe'er you find a human you
will find the case the same;
You may seek among the worst of
men or seek among the best,
And you'll find that every person is
precisely like the rest.
Each believes that his real calling is
along some other line
Tnan the one at which he's working—
take, for instance, yours and mine.
From the meanest "me-too" creature
to the leader of the mob,
There's a universal craving for "the
other fellow's job."
There are millions of positions in the
busy world to-day,
Each a drudge to him who holds it—
but to him who doesn't, play;
Every farmer's broken-hearted that in
youth he missed his call,
While that same unhappy farmer is
the envy of us all.
Any task you care to mention seems
a vastly better lot
Than the one especial something
which you happen to have got.
There's but one sure way to smother
Envy's heartache and her sob;
Keep too busy at your own to want
"the other fellow's job."

—Success.

QUEEN ESTHER'S PETITION.

THERE was a deep scowl on the chief clerk's face as he ran his eye over the special delivery letter he held in his hand. Impatiently he seized a pen and commenced a reply:

Washington, D. C., July 12, 190—.

Dear Senator: It will be impossible to reinstate your man, Williams. I have promised the place to Dawson. You know Dawson yourself, and there is no better man. I regret—

The door of the chief clerk's office was pushed gently open.

"Well?" he exclaimed without raising his eyes.

"Please may I come in?" asked a sweet childish voice.

He glanced up and with astonishment laid down his pen. On the threshold was a little girl with laughing blue eyes and sunny curls and the eager face was flushed with July sun.

"Well," he said gruffly, "aren't you already in?"

"Oh, yes," replied the child, "but your guard—"

"The messenger?"

"Yes, the messengers. They said you musn't be 'sturbed, but I 'splained that I am Queen Esther, and had to see you on most 'portant business."

"Queen Esther?" he asked.

"Not truly, my real name is Alice Williams—but I'm pretending I'm Queen Esther, and"—with a deep bow—"you are Ahasuerus!"

"And I'm come to save my people," she went on. "Not a sure 'nough nation, but my mother. You haven't asked me to sit down," she added.

With unwonted gentleness he stooped and lifted the child to his desk.

"Now, King Ahasuerus," she said, "we can talk more comfo'bly, but, first, are you a Medunpersian?"

"I think not," he answered slowly.

"Why?"

"I'm glad," she replied, "'cause as you aren't you can change your mind about 'smissing my papa."

"Did he send you here?" he demanded.

"Oh, no, no!" said the child; "he wouldn't never have let me come; nor mother most of all. I—I runned away! But won't you please promise you'll never tell?" she asked beseechingly.

"Yes, I'll promise—"

"Cross your heart?"

"Cross my heart."

"Father said you were the one to come to, but he'd never ask a favor of you. I couldn't let mother starve, so I thinked if you weren't dreffel cross I'd ask you myself, and I runned off, and—I think you're very nice."

"Thanks, Queen Esther."

"Yes, though you don't smile very much, but p'raps you've your own troubles. I symperthize with my mother, you know."

"How is your mother?"

"You see, she's had nervous persuation ever since father lost his money, and she mustn't never be worried, and," shaking her little finger at him, "you've gone and worried her!"

"I'm sorry," he muttered, as though he were but seven, and his accuser thirty-five.

"You see, father doesn't talk 'bout nothing but the for-tune he lost, and sometimes he drinks to forget it."

"Cowardly brute!" he muttered under his breath.

"So course, there's nobody to think about mother but me, and yesterday —"

"Well?"

"Father said the rent was due tomorrow and we haven't any money at all, and there's no use for him to try 'cause everybody's 'gainst him.

"And then mother cried, and she mustn't do that 'cause it makes her worse, and if she gets worse all the time she'll die!"

"Well, then, Queen Esther, what is your petition?"

"Why, you just put father back again! Won't you please?"

"It is one of the best places in the office, and Dawson must have it," he repeated to himself, but the pleading voice went on:

"Please, Ahasuerus, I just want you to let him stay till I'm big enough to take care of mother. It won't be so dreffal long."

"As soon as you are big enough to do that," he answered, smiling, "you'll go off and marry some rich man—"

"No, no," she interrupted; "that's a orful thing to do!"

The chief clerk had bowed his head on the desk.

"I'm 'fraid you're dreffal tired of me," slipping down, "and I must be going now or mother'll miss me."

"Goodby, Queen Esther," he said. "I will think your petition over and grant it if I can—and I thank you for coming."

"You are welcome," she replied sweetly. "But mother must have been mistooken when she said you hated her. You're so kind, I reckon you couldn't hate anybody, could you?"

"At least, not your mother," he answered, smiling down at her.

"Nobody couldn't do that. Remember you musn't never tell I came 'cause you crossed your heart, and that's more than a Medunpersian. Goodby." And the little mouth was put up to be kissed.

The chief clerk rose, and walking over to the window, stood gazing out for a long time. Then he turned and rang for his private secretary. To him he dictated a letter:

Washington, D. C., July 12, 190—.

Dear Senator: Yours of the 12th instant has been received. I take pleasure in informing you that J. R. Williams has today been reinstated.

Very truly yours,
John E. Mitchell, Chief Clerk.

"God save Queen Esther!" he muttered as he rang for a messenger.—Boston Post.

CARING FOR GLOVES AND RIBBONS.

A white glove should never be worn more than once without cleaning. If it is cleaned promptly after each wearing it can be used indefinitely, and the best way to remove a fresh stain is to dip a tooth brush in gasoline and rub the glove until clean, then rub dry with a piece of soft flannel.

Kid gloves of any color may be cleaned with gasoline, but the cleaning must never be done in a room where there is a light or fire. Put them on the hands and wash them in a bowl containing a little gasoline, using it as if it were water, and as if washing the hands. Rinse in clear gasoline and keep them on the hands until nearly dry, then pull them off in the proper shape; pin them up in the air to dry, and they will be unfaded and as soft as when new.

The tidy girl takes pride in her washable white kids, and always washes her own silk and lace gloves in summer.

The best way to wash the white kid gloves is to wash them on the hands in a strong suds of white soap to which a teaspoonful of borax has been added, and a little of the borax dissolved in the second and last rinsing waters will prevent the gloves from becoming yellow. White silk gloves are washed in the suds as if washing a handkerchief.

When ribbons have become wrinkled they can be freshened by dampening slightly on the wrong side, and then if they are pressed smoothly over a piece of white table oilcloth, they will need no ironing.

Black ribbon can be freshened by sponging with well strained cold coffee, and colored ribbons can be cleaned by putting them in the warm borax suds and allowing them to soak for fifteen minutes. Then lay them on a clean board and rub them gently with a soft brush until clean. Rinse out the suds in clear warm water, then wind them smoothly around a quart bottle filled with boiling water. If the ribbons are dried in this way they will need no ironing and they will look as clean and fresh as new ribbons.—A. M. H.

Now, girls doesn't that look good to you? It's a hint from a Kentucky subscriber of the Cultivator, and will, we trust, cause some of our California girls to return the compliment by sending in some hint that will aid in personal neatness.

By the way, let's start a Personal Neatness Club and have a meeting every week in the colums of the Cultivator.

Write Mrs. M., Household Department, care of Cultivator. 115½ N. Broadway, Los Angeles, and give your opinion and at the same time send along a hint.

Where do you keep your gloves when they are cleaned? Are your handkerchiefs tucked away "any old place," or where do you keep them? Where do you tuck your "combings" or do you leave them in your comb or brush? Do you have a cozy place to tuck away things and know where that place is, or do you say: "Mother where is my—?" Do other girls look in your room and say: "Well, ain't this nice," or don't you take other girls to your room?

And—oh, well, you konw, just send in some hints like Miss A. M. H. has.

"Bridget, did you mold the bread, as I told you?" "No, mum; I put it in that damp cupboard. Last week's bread molded itself in there, an' what's th' use of takin' extry trouble?"—[Cleveland Leader.

RHUBARB RECIPES.

Rhubarb, or pie-plant, has a large sphere of usefulness; and is quite as delicious as many other things. Few cooks, however, prepare it in a variety enough to have its value really appreciated.

Cut tender stalks that are of good acid flavor, wash and cut into one-inch pieces; place in a granite kettle and add two and one-half cups of granulated sugar to one quart of cut pie-plant, cover closely and place on the range where it will cook slowly. It requires no water; stir occasionally to make sure that the sugar is being dissolved by the juices of the rhubarb. When cooked clear, it is done. This is delicious served as sauce, or as a filling for cake; it is also nice served with tapioca as a substitute for apple.

If rhubarb is canned, it certainly will find acceptance. It can be cooked by the above method, then sealed in sterilized jars, or it can be canned by the cold water process. We have tried this last method at the Colorado Agricultural College and found it to be very successful. The following is the method which we employed:

Pare the rhubarb and cut into one-inch pieces. Pack in a jar, place under the cold water faucet and let the water run for about twenty minutes, then screw on the cover. Be sure to have the jar, lid and rubber thoroughly sterilized before using.

The following are some other recipes which have been tried and found to be excellent:

Pie-plant Preserves.

These are fine and are made similarly to the first recipe given, except the same weight of both sugar and rhubarb is used.

Rhubarb Marmalade.

This is good and may be used in many ways in winter. Use three-fourths as much sugar as you have rhubarb by weight. Cut the rhubarb in one-inch pieces; add sugar and let stand over night. In the morning, place in a granite pan and cook slowly for one hour; stir frequently. After it has cooked for about three-quarters of an hour, add to each quart of fruit the juice and rind of one lemon.

Rhubarb Cream Pie.

One cup of rhubarb chopped fine; one cup of sugar, one-eighth of a teaspoon of salt, grating of nutmeg and a little grated lemon peel. Moisten one tablespoonful of corn starch with a little cold milk; beat until smooth; then add one cup of rich milk or cream, and add to mixture of rhubarb and sugar. The cream or milk should be made hot enough to partially cook the corn starch so that it will not settle to the bottom of the pie, which will make it leathery and not acceptable. This filling can be cooked and placed in the baked pie crust, or it may be placed in the unbaked crust and cooked therein. It may be put between two crusts or put in one and covered with meringue. The yolks of two or three eggs may be added, by way of variation, if desired.—Lotta I. Crawford. In Bulletin of Colorado Agr. College.

Rhubarb Meringue Pie.

While rhubarb pies are usually cooked with two crusts, some very nice ones may be made with only one crust. The same mixtures may be used to make tarts or tiny pies for the children's lunches. Many who do not care for plain rhubarb are delighted with it when used with other fruit. The idea of upper crustless pies is largely to get as much fruit as possible with little paste, and yet have pies and not sauce.

Stew together 2 cups rhubarb, 2 cups sugar, ½ cup water. When soft, add beaten yolks of 2 eggs and press through sieve. Bake without top crust. When done, beat whites 2 eggs to a stiff froth with 1 tablespoon powdered sugar, spread on top and bake until brown. Serve cold.

Rhubarb Custard Pie.

Stew two cups of rhubarb, press through sieve or beat until smooth. Add one cup sugar, 1 egg, 1 tablespoon cornstarch, butter size large nutmeg. Stew together a minute. No upper crust. Add more sugar if desired very sweet.

Rhubarb Apple Pie.

Two cups of stewed rhubarb, 1 cup sugar, teaspoon butter, teaspoon flour, 1 cup apple sauce. No upper crust. If preferred, however, a crust can be put on, but it is nice without. Here is another: Cook 6 apples until smooth. Add 1 cup of sugar, 1 tablespoon lemon juice, 1 tablespoon cornstarch and 1 cup stewed rhubarb. With or without upper crust.

Rhubarb Prune Pie.

One cup stewed rhubarb, 1 cup sugar, one cup stoned, chopped, cooked prunes., Boil together for a few moments. Sprinkle a little more sugar on top of mixture after bottom crust is filled. Cover and bake.

Rhubarb Pudding.

Sift together 2 cups flour, pinch salt, 2 teaspoons baking powder, ½ cup sugar. Stir in 1 egg beaten with ½ cup milk, or cream, and 2 tablespoons butter. Add 2 cups rhubarb cut into small bits. The pink part with the skin left on is the nicest for this pudding. Boil in floured cloth until done and serve hot with any sauce.—[S. C. P., Massachusetts.

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WHITE WYANDOTTES—DUSTON AND White—all strains. Stock for sale. Eggs for hatching, $2 per 15; $10 per 100. Also Peafowls and Plymouth Rock Homing Pigeons. MRS. N. P. BAILEY, Colegrove, Cal. Cor. Melrose Ave. and Gower St. Telephone, Home E9006.

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The Produce Markets

Los Angeles Markets

LOS ANGELES, May 22, 1907.

The general tone of the market is stronger than last week, many products showing an upward tendency. Diary products and eggs especially showing an upward tendency. Of course wheat is climbing the ladder, hay is stiffer and the man with produce to sell is generally in it.

Butter.

Butter quotations stil stand at last weeks quotation but an early advance is promised.

Valley Creamery	47½
Coast fy,	45
Cooking	20

Cheese.

Cal. Young American, per lb	19
California Anchor	18
Cal 3-lb. hand	20
Northern, fresh	15½
Domestic Swiss	22
Imported Swiss	32

Eggs and Poultry.

Eggs have taken a turn and have advanced about one cent with a firm tone prevailing.

Eggs, local per doz	21½
Northern Candled	19¼

The following are average prices which dealers pay to producers for live weight:

Hens, per lb	13
Young Roosters, per lb	17
Fryers	20
Broilers, per lb	26
Old Roosters	7
Turkeys	17
Geese	12
Ducks	15@16
Squabs, per doz	1.50

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lbs	7.50@8.00
Prime Steers,	4¾
Heifers	4¼
Calves per lb.	5
Sheep, ewes, per head	5.00@5.25
Lambs per head	4@4.25
Wethers	5.50

Potatoes.

The potato market is stronger than last week and receipts not so heavy.

Colorado	1.65@1.75
Minnesota	1.70@1.75
Oregon,	1,80
New	2.50

ONIONS.

Onions, Silverskins	2.25
Onions, Nevada	2.50@2.60

Vegetables.

Asparagus, lb	11@15
Beets, per doz	20@35
Bell Peppers, Green, lb	12@15
Cabbage, sk	65@70
Chili Peppers Green	30
Chili, Dried, per lb	13@13½
Cucumbers, per doz	50@1.00
Carrots, per doz	20
Green Onions, doz bunches	10@30
Lettuce, per crate	75
New Potatoes, per lb	2½
Parsnips, per doz	35@50
Rhubarb, per box	1.40@1.50
Radishes, per doz	15
String Beans, per lb	7@8
Sugar peas, per lb	3½
Summer Squash, crate	80@90
Tomatoes, Mexican crate	2.20@2.25
Turnips, doz bunches	10@25
Peas, sugar, per lb	2@3
Squash, long neck	50
Artichokes	75
Water Cress per 100	40@50
Spinach, per doz	10@15
Corn per doz	75
Cauliflower,	75@1.00

Citrus Fruits.

Lemons	2.00@3.50
Valencias	1.50@2.75
Navels	1.25@2.50
Grapefruit Seedless	3.00@3.25
Grapefruit Seedlings	1.25@1.35

Fresh Fruits.

Apples, Ben Davis	1.50
Pearmains	2.25
Blackberries	7@8
Cherries, loose	12@13
Cherries white per drawer	1.50
Cherries, black	1.00@1.75
Figs	60
Gooseberries,	15@18
Logans	7@8
Loquats,	2@3½
Raspberries	8@10
Strawberries	3½@4½

Dried Fruits.

Evap. Apples, fancy, per lb	9½
Apricots,	17@17½
Peaches	12½
Pears	12@13
Prunes, fy,	5@8

Raisins—Four-Crown cluster, per box, $2.75; loose, 50-lb. box, 9c per lb.; 3-Crown London layers, per box, $1.95; loose 50-lb. box, 8½c per lb.; do, 2-crown, per box, $1.75; do, loose, 10-lb. box, 8c per lb.;seedless, fancy bleached, per lb., 12½c; Sultanas, unbleached per lb., 8½c.

Beans, Dried

Limas, No. 1, per cwt	4.75
Pink No. 1	3.00
Lady Washington	3.00
Small White	3.55
Black Eyes	5.50@6.00
Garvanzas	5.50@6.00
Lentils	12@15

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb. cans,	8
Light Amber	6½@7
Comb, water white, 1-lb. fms	15@16
Light Amber	14

Nuts.

Almonds per lb	19@25
Peanuts, Virginia	9
Peanuts California	6@7
Walnuts, No. 1 S. S.	14@15

Hay.

Barley, No. 1	14.50@17
Alfalfa, Local, per ton	14.00@16.00
Plain Oat Hay, No. 1	12.00@14.00
Plain Oat Hay No. 1	18.00@20.00
Wheat No. 1	14.50@16.00

Grain.

All grains even marked up this morning as indicated in the following:

Purchasing prices f. o. b., Los Angeles are:

Wheat, new, per cwt	1.70@1.75
Barley	1.17½@1.22½
Corn, per cwt	1.50
Cracked Corn	1.45
Feed Corn Meal	1.50
Shorts	1.35
Bran	1.20
Oil Cake Meal	2.50
Cocoanut Meal	1.40

Feed Stuff.

Selling price F. O. B. Los Angeles as follows:

Cracked Corn	1.55
Shorts	1.45
Bran	1.30
Egyptian Corn,	1.50
Rolled Barley	1.40

San Francisco Markets

SAN FRANCISCO, May 21, 1907....

Butter.

California, ex per lb	22
California, firsts	21½
California, seconds	21
Packing Stock	20

Cheese.

Cal. Young American, fancy	14½
Cal. Flats, fancy	11½
Cal. Flats, firsts	11
Eastern, fancy	18

Eggs and Poultry.

Fresh Ranch Eggs	19
Eggs, first, per doz	18
Eggs, seconds, per doz	15
Eggs, thirds,	15
Hens, per doz	5.00@5.50
Hens, large	5.50@6.50
Young Roosters, large	7.00@8.00
Young Roosters, small	4.50@6.00
Old Roosters	5.00&6.00
Fryers, per doz	6.00@7.00
Broilers, per doz	3.50@5.00
Ducks, young	6.50@8.00
Geese, per pair,	2.00@2.25
Turkeys, per lb	16@19

Live Stock.

Steers. No. 1	9@9½
No. 1 Cows and Heifers	7@7½
Hogs, 80 to 130 lbs	8@8¼
Hogs 250 to 350 lbs	7½
Calves, per lb	5@5½
Lambs, yearlings	6½@7

Potatoes

Salinas Burbanks, ctl	1.80@2.10
Oregon Burbanks	2.00@2.25
Rivers	1.85@2.10
New Potatoes	2½@4

Vegetables.

Asparagus	5@10
Cucumbers, per doz	1.00@1.50
Chili Peppers, Green lb	12½@15
Green Peas, per lb	3@4½
Squash, crates,	1.25@1.60
Onions yellow per crate	2.00@2.50
Onions, new per box	60@75
Peppers, Green Bell	25
Rhubarb, per box	1.25@1.50
Tomatoes, Mexican	1 25@2.25

Citrus Fruits.

Lemons	75@2.00
Navels	1.25@2.75
Seedlings	1.50
Grapefruit, seedlings	1.00@1.50
Grapefruit, seedless	2.00@3.00
Limes	3.00

Fresh Fruits.

Apples, per box	1.50@3.00
Strawberries, crate	1.00@1.50
Apricots, crate	2.00@2.25
Cherries, blk	75@1.10
Cherries, white per bx	50@75
Cherries per lb	05@10
Strawberries, Longworths	7.00@10.00
Blackberries, per crate	2.50@3.00
Logans, per chest	10.00

Dried Fruits.

Apples (evap.)	6@8½
Apricots, per lb	16@20
Figs, white	4@5
Prunes	3@4½
Peaches	10@12½
Raisins, seeded (1906)	3½@10
Thompson, unbleached	7½
Thompson, bleached	9@11

Beans, Dried

Limas No. 1	4.25@4.35
Pink	2.30@2.50
Large White	2.40@2.60
Black Eyes	4.90@5.00
Red Kidneys	3.50@3.75
Bayo,	2.85@3.00

Hops.

Fancy, 12c; choice, 11½c; prime 10½@11c; common, 8@10c per lb.

Nuts.

Almonds new	14@18
Peanuts, Viginia	6½
Peanuts, California	5½@6
W lnuts	15@16

Honey

Clear White Comb	16½
Amber	14@15
Extracted	5½@7

Hay.

Alfala, local	8.00@12.00
Oat	16.00@20.00
Wheat. No 1	23.00@26.00
Wheat, No 2	14.00@18.00

Grain.

Wheat No.	1.45@1.48½
Barley No. 1	1.25@1.2
Corn, small yellow	1.55@1.60
Corn, yellow	1.45@1.50
Oats, White	1.55@1.75
Oats, Red	1.60@1.75
Bran per ton	21.50@22.50
Straw, per bale	60@70
Feed Corn Meal, per ton	30.00@31.00
Cracked Corn, per ton	31.00@32.00
Oil Cake Meal, per ton	40.00@41.50
Cocoanut cake, per ton	27.00

Citrus Market

LOS ANGELES, May 22, 1907.

The weakening market reported last week has disappeared and a stronger tone now prevails in oranges. The slightly lowered prices of last week caused an increased consumption and the better tone soon prevailed. Navels have been cleaned up in some packing houses so that the few now remaining will find a cleaner market.

Valencies are finding fair treatment. The valencies shipped to date are from north Tehachepi. From that section there wil be about one hundred cars. Shipping from Southern Californi points will aggregate about 2000 cars and will not be forwarded in quanitit for some weeks.

Lemons indicate a better tone than last week. There is still a large qauntity of foreigns on the New York docks, but it is being worked in to the market gradually, and the superior quality of California lemons gives them certain advantage.

Yesterdays sale opened steady and maintained a good tone.

Shipments average 150 to 200 cars per day and, to date, aggregate 19920, of which 1884 were lemons. Same date last year 20,271, of which 2,179 were lemons.

NEW YORK, May 20,—There is a good active demand and prices are generally higher on all sizes and grades. Weather partly cloudy. Thirty-eight carloads of oranges and one carload of lemons sold.

NAVELS—
Cerrito, Thom's Or. G Ch Assn...$4.35
Swastika, Thom's Or. G. Ch Assn. 2.65
Topaz, xc Cal. C. Un. 2.35
Amethyst, st Cal. C. Un. 2.35
Wildflower, xc Cal. C. Un..... 1.30
Palm Tree, xc A. H. Ft. Ex..... 2.00
Golden Sceptre, Rialto Or. Ex..... 2.45
Gold Flower, xf Red. G. O. Assn... 2.30
Golden Gate, xc Red. G. O. Assn... 1.90
Fountain, ch. F. H. Speich & Co... 2.35
Sweetheart, xf H. G. Ft Ex..... 3.80
Royal Knight, xf R. H. Ex..... 2.35
Ben Hur, xc R. H. Ex..... 2.15
Golden Rule, xc R. H. Ex..... 2.90
Red Shield, xc A. C. G. Fr. Ex..... 1.85
Overland, xc Q. C. Fr. Ex..... 3.10
Ben Hur, xc R, H, Fr. Ex..... 2.55
Ostrich, xf S. Fr. Ex..... 2.80
Winner, ch S. B. Ex..... 2.30

SEEDLINGS—
Alhambra $2.40
Don Quixote 1.80
Parrot 2.40
Rossmoyne 2.05
Mission Bells 3.10

SWEETS—
Ocean 3.20
Fountain 2.65
Golden Sceptre 2.40
Old Mission, ch 3.50

GRAPE FRUIT—
Mahala 2.90
Cerrito 2.00

BLOODS—
Fountain 3.25
Ostrich 2.95
Blue Globe 2.80

CLEVELAND, May, 20.—The mar- is strong on navels and the weather is cold. Ten carloads sold.

NAVELS—
Golden Sceptre Rialto Or. Co.....$2.35
Newsboy, st. R. H. Ex. Red..... 2.75
Colombo, st. S. T. Ex. Fullerton... 1.60
Bon Ton, st. S. T. Ex. Lam..... 2.00
Coyote, ch O. K. Fr. Ex..... 2.15
Manzanita, st. S. T. Fullerton...., 1.95
Hacienda, st S. T. Ex. Fullerton.. 2.30
Green Crown, A. C. G. Ex Azusa.. 2.05

PITTSBURG, May 20.—The market is very strong and weather favorable. Fourteen carloads of oranges and one of lemons sold.

NAVELS—
Jasmine, st D. M. Ex. Duarte.....$2.75
Pet. extra ch S. A. San Dimas.... 2.00
Grayhound, ch S. A. Ex. San D.... 265
Family, Q. C. Ex. Corona,..... 2.50
Pointer, xc A. C. G. Ex Azusa.... 2.10
Hunter, xc A. C. G. Ex Azusa..... 2.15

PHILADELPHIA, May 20.—The market is steady and the weather is cloudy. Twelve carloads of navels, three of mixed, one of seedlings and one of lemons sold.

NAVELS—
Clover, xc Red. O. G. Assn.....$2.90
Mtn. Lion, fy F. H. Speich & Co... 2.50
Yosemite, fy Cal. C. Un..... 2.20
Amethyst st Cal. C. Un..... 2.05
Lighthouse, st Cal. C. Un..... 1.60
Puritan, fy S. B. Fr. Ex. Rialto... 3.05
Tallyho, ch S. B. Ex Rialto..... 2.55
Cosmos, fy S. B. Yerkes..... 2.30
Lark, ch O. K. Fr. Ex..... 2.10
Owl, st O. K. Fr. Ex..... 1.85
Topaz, xc Cal. C. Un..... 2.45
Fountain, ch F. H. Speich & Co.... 2.25

ST. LOUIS, May 20.—The market is firm on good stock and weather favorable. Nine carloads sold and ten on tracks.

NAVELS—
Lochinvar, xc R. H. E. Highld...$3.50
Belt, st R. H. E. Highld..... 3.10
Klondyke, F. H. Speich & Co..... 2.65
Grayhound, ex ch S. A. Ex. San D. 2.30
Wilson's fy E. E. Wilson..... 3.15

CINCINNATI, May 20.—The market is advancing and weather cold. Five carloads on tracks.

NAVELS—
Grayhound, ch S. A. Ex. San D...$2.50
Grayhound, ch S. A. Ex Clare..... 2.05
Grayhound, ch S. A. Ex. Clare... 2.00
Lark, ch O. K. Fr. Ex..... 2.50

Frank E. Kellogg, of Goleta, has sold his fifty-six acre walnut orchard to J. F. More for the magnificent sum of $1000 per acre. This place cost Mr. Kellogg $150 per acre thirty years ago.

The Ventura Press reports that canneries are offering as high as $70 per ton for apricots. If this is the case, there will be no dried 'cots this season.

O. L. Miller, of Lafayette, Colorado, recently purchased the Anderson orange grove at San Fernando.

For a good, Practical Milking Machine see the O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

ANOTHER FINE JERSEY.

Guy H. Miller, formerly of Riverside and now located at French Camp, near Stockton, with his Venadera herd of Jerseys, writes us: "It may be of interest to your readers to know that another California Jersey has made an excellent official yearly record. Signora Bruce a cow of my own breeding, a short time ago finished a yearly test under rules of the American Jersey Cattle Club for authenticated fat tests. I have just received word from the Club that the test has been found correct and with her score 87½ points, admits the cow to entry in Class A of Register of Merit.

For the 365 days Signora Bruce gave 8686 lbs. of milk, containing 487 lbs. of fat, equal to 573 lbs. of butter 85 per cent. fat. She was fed during the year 1282 lbs. of ground barley, 282 lbs, of caproco meal, alfalfa hay night and morning. She is an orange fawn in color with a little white, weight about 1000 lbs. Since finishing the test she has again freshened, dropping a nice heifer calf, her third heifer. She has had two bulls; the oldest is now in the herd of J. M. Huston at Imperial; the other I presented to the California Polytechnic School at San Luis Obispo. These sons of so good a dam should prove valuable sires in the hands of their respective owners."

Mr. Miller breeds fine Jerseys and is worthy the success which will come from conscientious work.

CHICO NURSERY SOLD.

A sale has been consummated whereby F. W. Power, who has held the controlling interest in the Chico Nuresry Company, and M. McDonald and A. McGill, minority stockholders, have disposed of their entire interests in this company to F. X. Bouillard, E. Wightman and E. Harlan, of this city, who are now sole proprietors.

During the time that the company has been under the present management, Mr. Wightman has been the head office man, and whenever Mr. Power was absent had entire charge of the office, and Mr. Harlan was assistant foreman, so that all members are perfectly familiar with the business and no change will be made in the policies of the company.

During the time that the Chico Nursery has been under the management of Mesers. Power and Bouillard, it has grown from a small affair until now it is one of the largest in the State, spending at Chico alone, for labor and necessary supplies, between $40,000 and $50,000 per annum. The past year has been the most successful in its business, and sales, they say, would have been much larger had they not sold so nearly out of trees shortly after the first of the year and long before the end of the planting season.—Chico Record.

UNDERSTAND YOUR SOIL.

The plowing and tilling of the soil is not alone for weed destruction. It plays an important part in maintaining a physical condition suitable for plant development.

It is impossible for an agricultural paper to tell any farmer just what is best to do in his particular case. Nor is it best to rely on the experiences of farmers who may speak on these subjects at farmers' institutes, for the reason that in some States there are many kinds of soils and climates. What is good for one soil may be detrimental to another. One farmer may get up and say that he never had good success with deep plowing. Why this lack of uniformity of experience in one country? Because each may be farming a very different class of soil and each tell the truth as he has found it.

In some things it is best to make some local experiments. State experiment stations can solve certain problems and make certain deductions, but each farmer must know whether or not they will fit his case.

A writer may advocate sub-soiling and tell of its great benefits. The reader must consider the locality in which the writer lives. He must know the nature of the soil in that locality before he sits down to write a contradictory article or says to himself, "That's a city chap, who doesn't know what he is talking about." Nor would it be safe for him to say, "Well, if that's his experience, I'll try it too." Sub-soiling proves of benefit where the rainfall is scant and the surface pact nature and the rainfall is scant and the surface or sub-surafce is light, sub-soiling is not beneficial, but harmful.

The same differences govern the question of spring and fall plowing, of deep and shallow cultivation, of planting by the usual method or listing. It is well to find out what is best for average years on a given farm and then take some chances on the weather. By doing part of the work one way and part another we can soon learn which is best, or equalize the chances of partial failure in certain operations such as plowing.

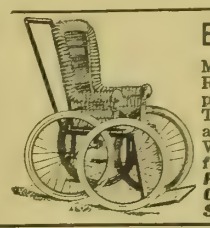
SEEKING PARDON.

The friends of E. B. Thomas, at one time Forest Supervisor of Southern California, are petitioning President Roosevelt for his pardon. Mr. Thomas was convicted of falsifying his books to defraud the government and fined $7000 and given a term in the penitentiary where he now is. His guilt seems to be unquestioned, but many think the punishment unduly severe. One of his friends says:

"We have based our case entirely upon the need of Mr. Thomas' family." "The fine of $7000 swept away all of the man's property and left the wife, little girl and mother without means. Mr. Thomas' aged mother does not know that her son is in the penitentiary."

Eight hundred acres of the Hollenbeck ranch, southeast of Azusa, have recently been transferred by Leonard Merril to Hon. J. W. Riggins, recently of Waco, Texas, for $60,000. Extensive improvements are promised.

The Talbert drainage district is to be increased by 500 additional acres at its northeast corner.



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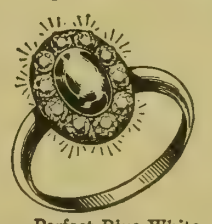
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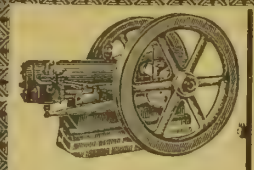
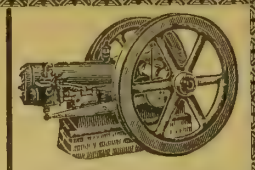

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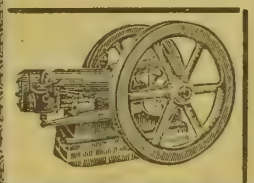
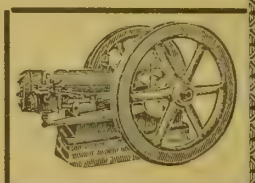

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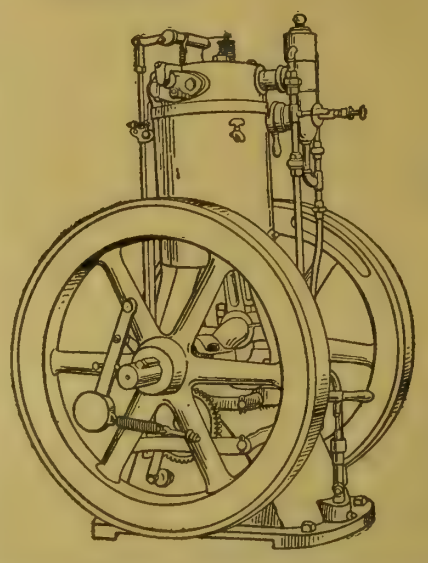

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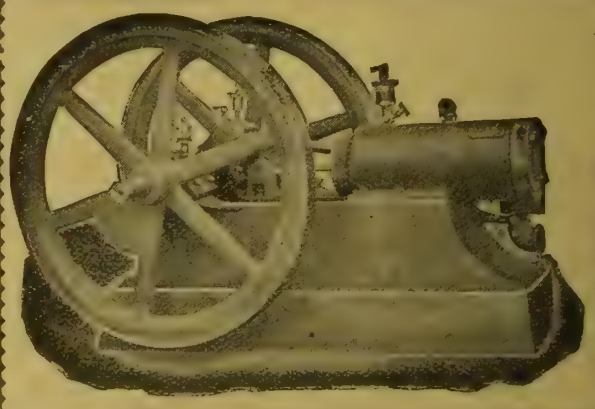

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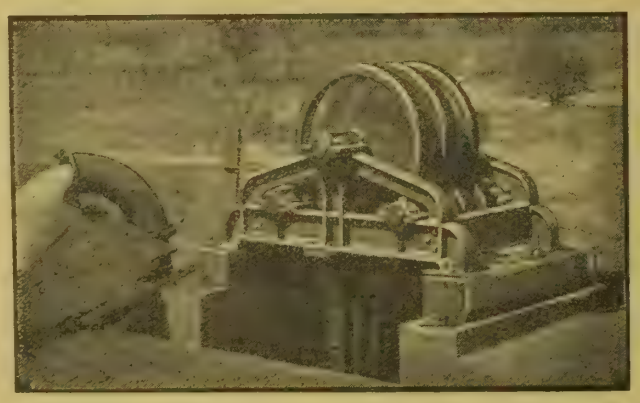

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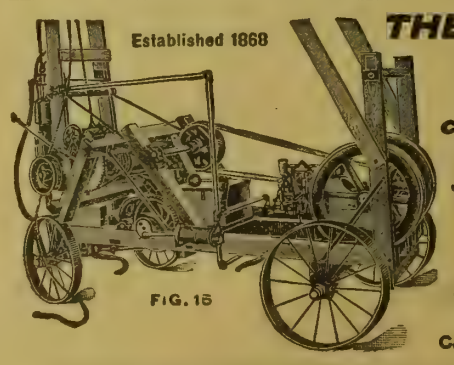

FIG. 15

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California Cultivator

Los Angeles May 30 1907 San Francisco

Tulare County's Citrus Fruits

SOME of Tulare county's claims as a citrus producing section have been looked upon as slightly tinged with "hot air," but to the observing visitor who takes a look at the well-kept groves and the extent of them, there is a realization of the worth of that community, and of the fact that the reasonable claims of its warmest friends will be made good. In fact, are being made good for by the views on this page, may be seen some scenes in the neighborhood of Lindsay which show a scope of orange planting truly astonishing. The illustration of the exhibit of Lindsay at Tulare County Citrus Fair held at Porterville last December, shows that Lindsay not only grows quantity, but has an artistic taste in displaying her principal product. The next Citrus Fair will be held at Lindsay next December, and it goes without saying that artistic displays of fine fruit will be made. Water is near at hand and its securing has not caused great outlay, so that further development of this fine section

along citrus lines may be expected. Nor is the citrus the only product, for the visitor at the last fair found while the orange predominated, as was eminently proper at such an occasion, there were also deciduous fruits, grains and many other farm products, not the least of which were some remarkably fine specimens of dairy and other stock.

Regarding the orange in Tulare county it is claimed there are over 10,000 acres now planted in citrus fruits, nearly all of which have been planted since 1888, though the very first experimental plantings were made as early as 1880 at Porterville and Lemon Cove. Since then there has never been a serious setback on account of unfavorable weather conditions. In fact, the high summer temperature tends to ripen the fruit much earlier than other citrus sections, so the fruit is usually all off the trees and marketed before the Christmas holidays. If it is desired to hold over the late oranges, as has been done with over a hundred cars of Valencias this year, it goes through the season in good condition.

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Best Condition Powder Made.

To prove it, we will send to new customers one 25 lb.

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to any point west of the Rockies. No cheap premiums no gaudy colored pictures, but a legitimate business offer to induce a trial, hoping to add many steady customers, feeling sure that a trial of the goods is the very best advertising.

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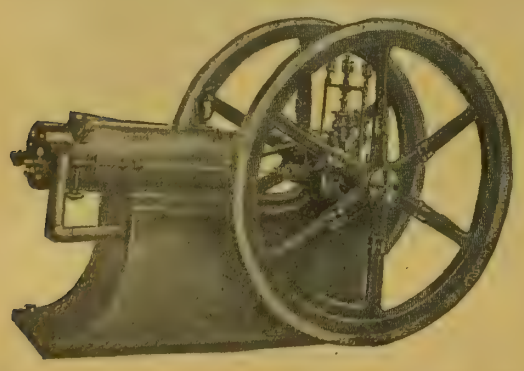

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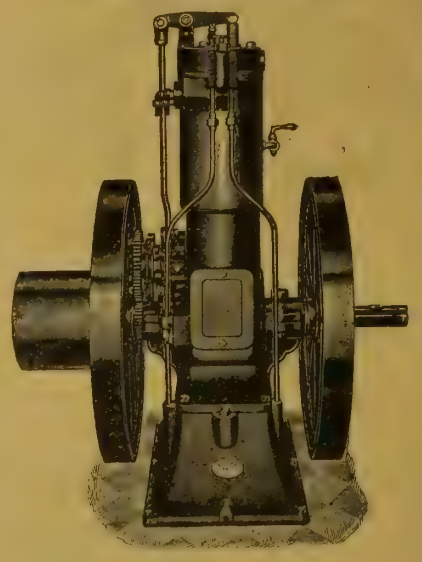

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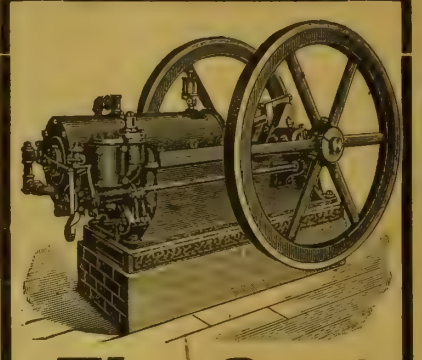

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R. D. Box D87 **L. E. BERKEY,** Fullerton, Cal.

California Cultivator

Vol. XXVIII—No. 22 Los Angeles, California, Thursday, May 30, 1907 Subscription $1 a year

Sugar Beets in the San Joaquin

The Successful Factory of the Pacific Refining Company at Visalia Affords an Outlet for 4000 Acres of Tulare County's Products.

BUT a few years since it was claimed that the great San Joaquin Valley was not adapted to sugar beet culture. A little later a few "wondered" if the conclusion were correct. Then a few hard-headed, "show me" men said we'll know to a certainty. Indifferent success or occasional failure meet the first experiments, but nothing daunted, the matter was followed to a successful conclusion and we now note the following item in the Visalia Daily Times:

One Hundred and Fifty Men at Work.

"Another industry, and one of the most important, is the beet sugar factory established last year and operated during the summer for the first time. This industry is a new one in the San Joaquin Valley but has proven most successful, so much so that the acreage planted this year is increased one-third over last—from 3000 to 4000 acres. From this vast area it is expected that 40,000 tons of sugar beets will be raised, which means about 4000 tons of pure sugar of an approximate value of $400,000. During the operating season 150 men and boys find employment at the factory."

The institution which makes four hundred thousand dollars to grow where one blade of grass grew before, is certainly accomplishing results for those farmers who receive the benefits, worthy of note. This institution is the property of the Pacific Sugar Company and is the only one in the great San Joaquin Valley. It is to be hoped that its success will be such that other factories will spring up all over the great valley.

The factory, situated one mile south of Visalia, was completed last year and represents an investment of a half million dollars. It has demonstrated by actual experiments the adaptability of the soil of that section for the successful and profitable culture of sugar beets. It has a capacity of 350 tons daily and employs a large working force continuously.

Four thousand acres are now planted to sugar beets for the campaign of 1907 and from $250,000 to $300,000 will be paid to the farmers for the crop. In many instances the return from the crop will be equal, if not greater, than the present price of the land upon which the same is being grown.

Wonderful Development.

The beet sugar industry has developed wonderfully during the past few years, but in view of the fact that the increase of the consumption of sugar nearly equals the increase of production and that the United States imports more than 70 per cent. of the sugar consumed—there would seem to be no doubt as to the advisability of acquiring land that will produce sugar beets and of becoming proficient in the science of cultivating them. In all sections where factories have been established, land has increased from 200 to 300 per cent. in value and there is no section of the United States that is better adapted for this industry than Tulare county, California.

The sugar beet is a product which requires intense cultivation, hence, gives larger returns to the farmer who will meet its requirements. That the great interior valley has been proved by this enterprising company, to be well adapted to beet culture, gives much gratification to every well wisher of the State. Hence, a word as to the method of culture which has proved successful in that section, written by one thoroughly conversant with the subject:

How to Grow Sugar Beets.

Now on October first I would look up and contract with some one to plow and subsoil my land for me. The ground to be turned over two inches more than before, say seven or eight inches, and in addition subsoil every furrow to an additional depth of seven or eight inches; thus stirring the ground to at least a depth of fifteen inches. There are three ways employed in this kind of plowing:

(1.) Plowing with a 14-inch plow, two horses, and following with a regular subsoil plow with two horses; (2.) Plowing with a single 12-inch plow with subsoiler attached and three horses; (3.) Plowing with a 14-inch disk plow with subsoiler attached and four horses. The first costs the most but it is better in the end. Let us suppose that it has taken twenty days to do this plowing. I would contract to have some one harrow the field, heavy. It would be a good plan to harrow the field after each day's plowing. Then I would allow the field to stand until rain came, at least one inch. If this occured any time before December first I would give the entire field a light harrowing ,in fact, would not allow a crust to form at any time. Now suppose the first of January arrived and we had one to three inches of rain; I should again contract for a party to go on the land with a team and disk up, harrow, roll or clod mash and cross harrow ten acres of this land the first week. Having now a good seed bed and finding the surface and bottom moisture united, and the top moisture not over one-half inch from the surface I would hire a man and team to do the seeding at a stated price per acre. The seeder would be set so that the rows would be eighteen inches apart and the seed desposited three-quarters to one and a quarter inches below the surface of the ground, depending upon the amount of moisture present. As the seeder plants four rows, I would have the marker so placed that I would leave an extra space of six inches between every fourth row. If I found upon finishing my seed bed that the top moisture was more than three-quarters of an inch from the surface I would roll before seeding, with a rough corrugated iron roller. The first ten acres are now planted and while we are waiting for the germination and appearance of the plant, which usually takes from ten to fourteen days, we proceed with planting the next ten acres, repeating the process described. Should a heavy packing rain come before the seed is up on the first ten acres I would go over with a light harrow, with the teeth turned backward so as to break any crust that would interfere with the growth of the young plant, but not so deep as to disturb seed. Suppose now that the seed is all up, and it was not necessary to break the crust in the manner mentioned by light harrowing, and the young beet shows two to four leaves, I sould have my labor contractor on the ground, ready to do the thinning and just before he commenced I would roll the ground with a light smooth roller and immediately follow with a cultivator, The purpose in rolling is to make the rows of beets stand up prominently, to facilitate the cultivating. The contractor then sets his men to work the first man uses a hoe and blocks off the beets leaving bunches of from two to six beets every seven to nine inches. Immediately following this man, comes another who takes two rows at a time, and who pulls all the beets except the strongest in the bunch, and at the same time tucks about the root of the beet a little loose earth. Three men will do from one-half to an acre per day, the amount depending upon the weeds state of the tilth and other local conditions.

Factory of Pacific Sugar Company at Visalia
Only Plant of its Kind in San Joaquin Valley

Continued on Page 566

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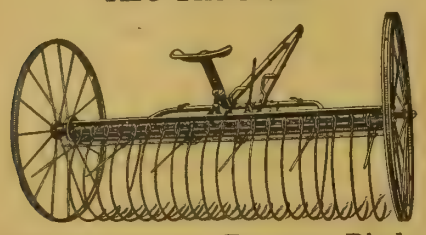

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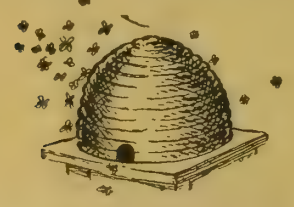

Crimson Winter Rhubarb

Original Burbank Strain

$1.50 per Doz., $6.00 per 100, $40 per 1000

Now is good time to plant. We are the only Rhubarb Specialists on the Coast. We devote most of our time to its cultivation and improvement. We have the Best pedigreed plants ever offered of this wonderful money maker. Write or call on

J. B. WAGNER, the Rhubarb Specialist, Pasadena, Cal.

A Fine Stock of Superlative Raspberry, also Fruit Trees and Vines of All Sorts. Both Phones.
P. S.—See Article in Cultivator on Page 556, issue of December 6th.

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Deciduous Fruit Culture

By J. W. MILLS

HARVESTING ALMONDS.

ALMONDS should not be gathered till the husk will separate from the nut without leaving the hull white or uncured in spots. Premature picking will make a bad looking nut on this account, and it makes the handling more expensive because the husks stick. When the husk will separate freely it is time to gather them. There will always be some nuts on which the husks will stick. This is usually due to some disease of the nut and is almost always due to gum.

Sheets made of burlap and big enough to cover all the surface under the spread of the top when one strip is placed on each side and lapped, make the most economical sheets for picking. The nuts are knocked off with slender willow or bamboo poles. If the trees are large and tall, a man in the top with a short pole will do more work than two with large poles on the ground. He can employ quicker action. The nuts are gathered up in picking boxes and taken to the hulling shed and run through the hulling machine at once. If this work is delayed the husks will become dry and cling to the nuts, necessitating much hand work. The nuts are piled on a table around which men or women are seated and the nuts sorted out and put in boxes. It will not do to pile up or put in picking boxes right from the huller but allow them to stand a couple of days as there will be enough green husks to cause heating and a discoloration of the shells in places. Each person at the table should have a piece of wood, a dry branch will do, about 10 inches long and an inch and a half thick, to break open "sticktights," nuts on which the hulls stick and throw the kernels there obtained into a small box conveniently placed within reach of two operators.

These kernels should be separated into broken and wholes. Both classes have a good sale and the whole kernels sometimes bring as high as 35 cents, or more, a pound.

There are a few locations in California where the quality of the almond is superb. It makes a bright, attractive nut that cannot be improved upon in appearance by bleaching. These areas are quite limited and as far as developed are not very productive. The requirements for such development in quality are supplied entirely by climatic conditions. These conditions are not conducive to the development of heavy crops, so that what is gained in one way is lost in another.

The locations which produce large crops, produce nuts that are liable to have dark shells and it is this quality that the growers are required by the trade to improve. The only method is to bleach them. This is done by the use of sulphur fumes or a solution in which the nuts are dipped. Neither of these two methods will affect a hard shell almond, but the soft and paper shells are more or less injured by having the flavor destroyed. Paper shell almonds have openings in the shells that admit the bleaching fluid and sulphur fumes which destroy the flavor at once and in a short time the nuts become rancid.

Bleaching with sulphur is done by placing the nuts in a bin with a perforated bottom, sprinkled slightly and sulphured from below so that the fumes will pass through the perforated bottom and on up through the nuts. After leaving the nuts in this bin for four or five hours, they are spread out to dry or put in shallow boxes, then sacked for market.

Nuts that are to be kept for use should never be bleached. Place them in shallow boxes till thoroughly dry and put away in sacks.

OLDEST ORCHARD IN AMERCIA.

The oldest apple orchard in America, if not in the world, is in the center of the ancient town of Manzano, eighteen miles southwest of Estancia, Terrance county, New Mexico. Many of the trees are more than six feet in circumference, but all are still fruitful and vigorous, although neglected for generations. Little is known of the history of this orchard, but the oldest inhabitants of the valley of the Rio Grande remember the orchard from childhood, and say that the trees have not changed in appearance since then. Venerable Mexicans and Pueblo Indians tell of visiting the orchard as far back as they can remember and finding apples on the ground in all stages of decomposition at least two feet deep.

The Estancia Valley has been peopled for ages, probably by the kinsmen of the natives found by the Spanish explorers at Gran Quivira, Abo and other ancient cities. Probably in the early days of the Spanish occupation some Franciscan monk found his way to Manzano, and there planted the seeds that have developed into these venerable trees. They are, no doubt fully three hundred years old.

Close by the orchard is a little lake, fed by a large spring. A short distance away is a grove of pines and cedars, making an ideal place for picnic and camping parties.—The World.

CALIFORNIA GYPSUM.

There are now four gypsum mills in the State, one at Amboy, one at Los Angeles, and two at Palmdale. Of those at Palmdale one is still in process of construction. The product of these mills is consumed in the State. It is used mostly for wall plaster, but a smaller amount is ground for fertilizer. Generally speaking, the gypsum runs from 54 to 90 per cent. pure. Deposits occur, however, in the form of alabaster, which are very pure and are suitable for the manufacture of plaster of Paris, but they are far from railroads, and so at present unavailable. Gypsum sets very quickly, usually in about five minutes. Because of this, a retarder, often consisting of slaughter-house refuse, dried and powdered, which delays the setting from fifty minutes to two hours, is employed. There is nothing peculiar about the California gypsum, as distinguished from that of other localities, except the fact that perhaps at one of the plants it is necessary to regrind the gypsum after calcining it. —[San José Mercury.

Foreman (after ten hours of it)—But why—why—in the face of such evidence in his favor, do you still believe the man to be guilty?
The calm minority—Why? Oh, because!—Puck.

Mrs. Backpay—Good morning, sir. Will you take a chair?
Installment House Collector.—No, thank you, ma'am. I've come to take the piano.—Philadelphia Record.

UNIVERSITY FARM SHORT COURSE.

The State University is sending out a circular on the scope and aim of the new University Farm near Davisville, from which we quote:

The University Farm, the selection and purchase of which was provided for by an act of the California Legislature of 1905, consists of about 780 acres of first-class valley land contiguous to the town of Davisville, in Yolo county. The farm is upon the irrigation system of the Yolo Consolidated Water Company and water rights covering the whole acreage accrued to the University by donation from the citizens of the vicinity. The farm is very eligibly situated at the junction of the Oregon and Central overland railway routes, at a distance of thirteen miles from the city of Sacramento.

Character of Instruction on the University Farm.

The purposes of the University Farm and the duties of the Regents of the University in connection therewith are defined by the statute as follows: "The Regents of the University shall appoint the necessary instructors and inaugurate and provide for the conduct of instruction in agriculture, and in such other branches of learning as are allied thereto, and as are caculated to better qualify and inform the students attending in the theory and practice of agriculture. This instruction shall be conducted in connection with, and as a part of, the College of Agriculture of the University of California, provisions being made by the Regents for such attendance on the farm of the college students as may be deemed best and necessary to the completion of their college courses. The University Farm and the instruction thereon shall be so conducted as to meet the needs of persons who desire instruction in agriculture, horticulture, viticulture, animal industry, dairying, irrigation and poultry raising, and to prepare them for the pursuit thereof; and shall be used for experimental and investigational work in connection with the agricultural experiment station of the University of California. Short courses of instruction shall also be arranged for in each of the leading branches of agricultural industry, so regulated as to provide for popular attendance and general instruction in agricultural practice."

* * * *

Immediately upon the attainment of title to the tract of land at Davisville the Regents of the University entered upon the construction of buildings and purchase of equipment so far as the balance of the appropriation remaining after payments for the land, made by the commission empowered by the statute for its selection and purchase, would provide them. Building is now in progress upon a capacious creamery to furnish ample accommodation and equipment for manufacture of butter and cheese and by-products on a commercial scale, with additional rooms for lecture and laboratory instruction. There is also in construction a livestock pavilion arranged to illustrate instruction by direct use of animals and to serve as a lecture-room for large classes in other subjects, and as a general auditorium. Contracts have also been let for the building of cottages for instructors and foremen. Appropriations by the Legislature of 1907 will provide dormitory accommodations for students, barns and sheds for stock, simple buildings for horticultural, viticultural, and other instruction, shops for farm me-

chanics, sheds for tools, implements, etc.

The first offering of instruction in Agriculture on the University Farm will consist of a series of short courses calculated to meet the demand for knowledge of particular branches of California farming, and at the same time to connect these short courses so that one electing to pursue them consecutively could obtain a general insight into all of the most prominent lines of agricultural effort in this state and be aided in choosing from them the directions of his own undertakings.

The short courses this year are:

Dairy School.—Oct. 2 to Nov. 26.

Animal Industry and Veterinary Science.—Oct. 30 to Nov. 26.

Cereal Culture.—Nov. 6 to Nov. 26.

Irrigation and General Agricultural.—Dec. 3 to Dec. 21.

Wine Making and Wine Testing.—Jan. 2 to Jan. 8.—

Grape Growing.—Jan. 9 to Jan 15.

Orchard Practice and Protection.—Jan. 16 to Feb. 5.

Full information may be had by addressing Acting-Director Wickson at Berkeley.

TEA GROWING IN CALIFORNIA.

We notice new efforts are being made to grow tea in our State and, so far as the growth of the plant is concerned, it will unquestionably be successful. We have known of tea plants growing here from our earliest recollection, as we have of tobacco, but in neither case has commercial success been achieved, for several reasons. In the case of tobacco there is reason to expect that suitable soil and conditions will yet be discovered to make its production a commercial success, but this is doubtful in regard to tea. The tea plant belongs to the camellia family, and requires largely the same conditions and treatment, but the tea of commerce is a manufactured article, and in its manipulation requires great care, combined with expert knowledge, and exceedingly low wages, none of which, especially the latter, can be had in California. Tea growing for curiosity is all right, but as a commercial proposition, it is as well let alone.

GUARD AGAINST BORERS.

Newly planted trees should be carefully guarded against borers. Now is the season when the females are laying their eggs on the young trees and these, as soon as hatched, will commence to burrow their way into the trunks and, once inside, the damage is done and the tree permanently injured. All young trees should be carefully shaded from the direct rays of the sun. A piece of old gunny sack wrapped around the stem will answer, or any of the tree protectors made for the purpose are excellent. If left exposed there is always danger. The protection should remain until the tree has produced a sufficiently large top to protect its own trunk, when there will be little danger.

WRITE LETTERS.

The work of every commercial organization throughout California is devoted to increasing population by bringing in a desirable class of immigrants, and to this end The California Promotion Committee has urged that material assistance can be given by the people of a community if they will constitute themselves into individual committees on population, by writing letters to their friends and relatives in their old homes. If every farmer in California who has come here from some other country or some other State will write letters back to his old home, and will also send names in to The California Promotion committee, San Francisco, he will be doing big work toward building up the State, and especially in bringing in men and women who will solve the industrial question of sufficient labor supply for the agricultural districts.

The committee will write to all people whose names are sent in, and in doing so will tell at whose instigation they are writing.

TRANSPLANTING "BIG TREE" SEEDLINGS.

Contrary to prevalent belief, the famous "Big Trees" of California do reproduce themselves under certain favorable conditions. The trees seed freely, but the seed rarely germinate except when they fall where the ground has recently been burned over. Once started the young growth only needs a moderate amount of light and protection from fire and stock grazing. With some care this race of forest monarchs need not become extinct, but may be greatly multiplied. The number of mature trees is not great, and healthy young growth is rare, but in some situations there are plenty of seedlings. In order to establish these trees more widely, it is proposed to move some of the seedlings to localities where they will be apt to grow.

OVERWORK A WASTE OF TIME.

Overstrained faculties can never bring out the best results. Overwork is always a waste of time; and though it may not seem to be so at first, eventually the sad truth is always manifested. To cut off needed recreation, to curtail the hours of sleep, to postpone a holiday indefinitely, to refuse to take rest and ease and change, under the impression that thus time is saved, is always a short-sighted policy and often a fatal mistake. The time arrives when the poor, abused faculties take their revenge and refuse to serve altogether, or do in so feeble a fashion as to show their deterioration.

MAY MOVE.

The Crayton Manufacturing Comepany are considering moving their factory away from Long Beach, as they have had strong inducements from several other towns. They manufacture the Perfection Acetylene Generator, one of the best generators on the market today.

The Chamber of Commerce of Long Beach made a thorough examination of this concern, and their report is as follows:

"Your committee, to whom was referred to the question as to the merits of the Perfection Acetylene Generator, manufactured in this city by the Crayton Manufacturing Company, beg to report as follows:

" 'We have taken the trouble to inquire of parties who have had in use for a number of years the acetylene generator manufactured by this company, and we find that in every case it gives excellent satisfaction. So far as we can find, those who use this generator are unqualified in its praise, especially emphasizing the quality of light it furnishes.

As the Crayton Manufacturing Company are not asking anything in the way of land or bonus to carry on their business, your committee feels warranted in saying that the enterprise is one likely to contribute materially to the growth of the city, and as such should be commended.

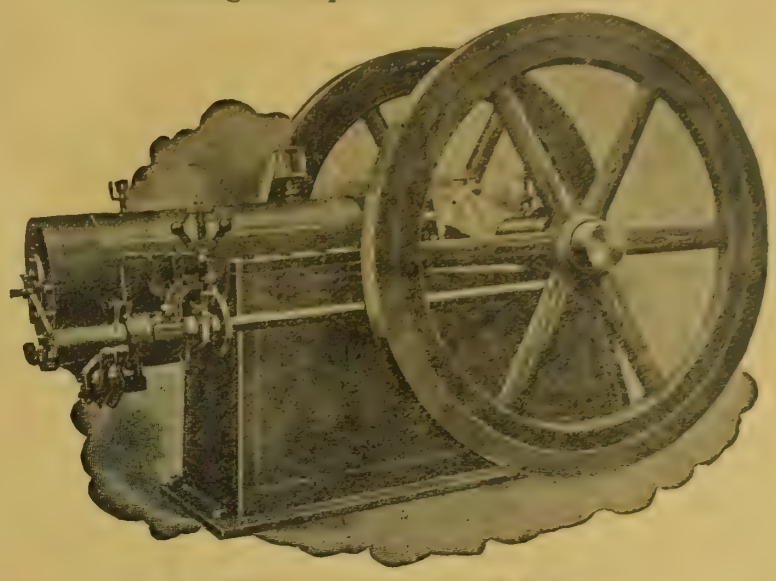
The factory is one that will employ at least fifty men in the coming year, and will be a credit to the town where they may locate.

Columbus Engines

MADE BY

Columbus Machine Co., Columbus, Ohio

Have stood the test sixteen years.
The largest output in the United States



Standard Horizontal, 4 to 60 H. P.

Read what this man says about Columbus Engines:

Greenleaf-Compton Company, Tropico, Cal., 4-3-07.
121 So. Los Angeles St., Los Angeles, Cal.

Gentlemen—For about four years, I have used a Columbus engine of ten (10) horse power; which has been running a 3½ Vertical pump and pumping about 35 inches water with a 90 foot lift, and when the time came to buy a new pumping plant for my ranch near Anaheim where we we shall need water for about 200 acres, I decided to have a 60-horse Columbus engine installed, and placed the order with you because I expect to have a pumping plant that cannot be excelled.

Respectfully, E. B. BARY.

This 10-horse engine is pulling 13½ horse power. We are installing a 60-horse plant for Mr. Bary, 3½ miles north of Anaheim. Come in and let us demonstrate the simplicity of Columbus Engines.

Greenleaf-Compton Co.

121 So. Los Angeles St. **Los Angeles, Cal.**

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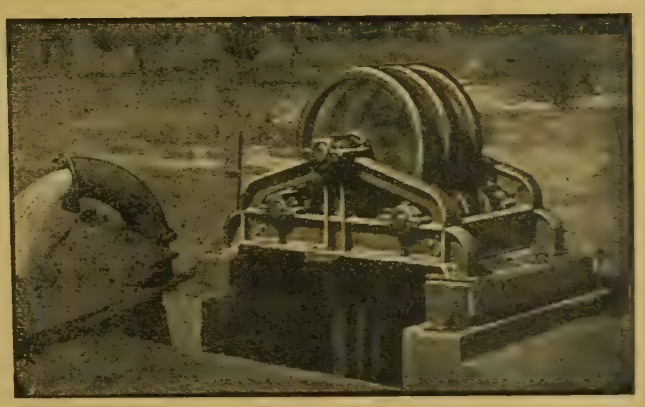

It will pay you to investigate the Addison before purchasing a pump. Send for Catalogue B.

Addison Pump Company

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FORWARD QUESTIONS DIRECT.

We desire to call the attention of the Cultivator readers to the fact that they should mail this office direct any questions they desire answered on poultry, stock, dairy, horticulture, or agriculture. Do not write to individual members of the staff but send all questions direct to the office and they will be answered by the editor having charge of that special department.

GROWTH OF THE CULTIVATOR.

The California Cultivator has reached the respectable circulation figure of 12,000 subscribers. No other weekly agricultural or horticultural journal in the state, nor on the Pacific Coast surpasses the Cultivator in its field of information. The very best talent is employed on its staff of contributors and the statements made by these expert writers may be relied on as practical to California conditions.

It is the aim of the Cultivator to keep in the forefront in the agricultural and horticultural field and to give each week the most valuable information to be gained along these lines.

Correspondence, questions and suggestions are specially invited and will always receive prompt and careful attention. These questions and suggestions should be sent direct to the Cultivator office and not to the staff contributors. Bear this instruction in mind to insure prompt attention.

The slump in the New York stock market last month as predicted had no serious effect on the general conditions of the money market. The gamblers on Wall street suffered, but nobody cares especially for them. The country at large is the most prosperous in its history, owing largely to the agricultural greatness of the past decade. So long as the farmer prospers the country will experience no serious backset.

THE VETERANS' DAY.

May 30th is distinctly the Veterans' day. It has been set apart to commemorate by fitting tribute, the services rendered the Nation by the living and dead heroes of 61-65.

It is purely American in its observance; no other nation has such a day, nor do such thrilling memories cluster around any given period of time. It is both right and proper that the observance of the day should be marked by a spirit of unostentation; that with songs and flowers and tributes we should decorate the graves of our Nation's defenders as becomes a people chastened by the reverses, the loss of human life, the expenditure of treasure, which the war of the rebellion evoked.

It is also befitting our great National Christianity that we should put away all thought of malice or hatred, toward those who caused this fearful sacrifice, and standing by the green mounds of our soldier dead, both North and South, pledge our faith and love anew to the righteous principles upon which this government was founded.

Let the past be forgiven—if not forgotten—and let us bind ourselves once again in a common bond of brotherly love and national unity, swearing eternal fealty to the flag, the constitution, and the indissoluble union of the States. Let us pledge ourselves anew to defend the honor of the Republic against the heresies of anarchists, or the preaching of the enemies of good government. Our comrades died that this government might live. Let us maintain to the end the principles for which they sacrificed their lives.

CELERY GROWERS FILE CLAIMS.

The celery growers of Orange County, who claim to have lost $150,000 through the failure of the railroad to move their crops, contemplate bringing suit to recover damages therefor. The Interstate Commerce Commission, which was to have meet in Los Angeles last week, would have taken up this matter and gone to the bottom of it with a view to ascertaining why the railroad did not furnish cars to move this crop.

It has been contended by the railroads right along, that it did not have cars sufficient to move the California product, neither in the North nor in the South. To determine the question from an official standpoint, the Interstate Commerce Commission would doubtless have summoned the managers of the railroads in question; namely, the Southern Pacific, and Santa Fe, and their answer would have been a matter of record.

The California Vegetable Union, acting for these celery growers, will file, it is said, if it has not done so, claims with the Southern Pacific officials for the amount demanded, but it is stated that this will be the end of its action as it does not intend to take steps to recover remunerative damages.

The shippers' aim is to avoid legal complications by showing the railroad company, in a friendly manner, just how they lost their crops through its failure to furnish cars when the same were most needed.

It is claimed such a failure, when the shortage was most felt, the California Vegetable Union officials investigated and found large numbers of empty cars scattered along the line of the roads. These were furnished when the demand became strenuous, but never in sufficient numbers to move the crop, and immense quantities of the finest celery was left to rot in the fields. To recover the loss, it is claimed the railroad company is responsible for, a suit at law is now threatened. With the present temper of the people, on the matter of car shortage, it seems to us that the railroad company should give the subject most careful attention to the end, that the losses which occured by reason of failure to supply cars in adequate quantities to remove the crops may not be repeated.

DOLLAR WHEAT.

The spectacle of dollar wheat on the Chicago market reminds one of the days of '67 when the country went wild for a time, over the phenomenal wheat market which reached $2.50. The craze on 'change then started much as the present one has, because of apparent shortage in the wheat producing sections of the world, with our own peculiar climatic conditions which made the outlook for the crop anything but promising. Of course, the market did not remain at the $2.50 point very long, but, however, sufficiently long to permit Armour, "Old Hutch," and several other operators on 'change, to rake in several millions' personal profit. From a purely commercial view there is no reason why wheat should soar above the present market quotations. Wheat at $1.00 is not excessive as compared to prices charged for other necessities of life, and growers will be correspondingly benefited by the rise.

It will probably be found later, that the present boom is a grain-market job engineered by individuals to make a big profit out of apparently adverse conditions. The rapidity of the jump in price leads to that conviction at least.

Here are some of the high prices reached by wheat during "corners" and scares in the past years when the dollar mark was exceeded: 1867, shortage in crop, $2.95; 1888, cornered by "Old Hutch," $2.00; 1898, cornered by Joe Leiter, $1.85; 1904, "black rust" scare, $1.24.

We are glad, however, to know that growers will realize good results for wheat as $1.00 per bushel yields the producer a handsome return. There is one thing about all these high prices for farm products, the man who is behind the plow gets his share of whatever advance there may be, sooner or later.

SUGAR BEET.

Continued from first Page

The contractor should have enough men to do the ten acres in one week, as it is much better to thin while the beets show from two to four leaves than to do so later. By thinning at the proper time, the increase in yield will be ten to twenty per cent. higher. If a rain does not come before two weeks after thinning I would cultivate, and should continue to cultivate every two weeks. By the middle of March I should be able to judge from the amount of previous rainfall and the state of moisture present in the soil as to the advisability of irrigating, also by this time the leaves would be so large that it would hardly be possible to cultivate further. So then plow between every fourth row as clean a furrow as possible and run the water down the furrow by simply opening the head ditch and allowing the water to flow to the end of the furrow. One man should irrigate at least five acres per day enough water to give the ground a good soaking, and the plowing for the ditch and cultivating can be done by a man and light team. I should use enough so that the land would be wet from one ditch to the other, this under ordinary circumstances will occur by the time the water has reached the end of the furrow. Then turn into another furrow, and so on until the whole ten acres has been so treated. Then just as soon as I could get a cultivator at work, I would give a deep cultivating for the last time, and have the contractor hoe out all the weeds. After this there is nothing to do until harvest time, which will arrive some time in July or August. Upon being notified by the factory to deliver beets, I would instruct the contractor to commence plowing out on a certain day, and to have the help on hand. I should then use a single subsoiler with a special share extending on one side only and plow down beside every row of beets at a depth of about fourteen to sixteen inches, so as to loosen the beets in the rows. The contractor could then put his men to pulling the beets up, at the same time topping properly and throwing them into piles. When a pile is finished it should be covered with leaves. Prior to this time I would have contracted with the same party to do my hauling, the loading is part of the labor contractor's agreement. I should try to harvest about as many beets per day for the factory as could be plowed out by one team in three-quarters of a day. In case the plowing proceeded faster than the topping and hauling, the plow team could be used for hauling, simply keeping enough beets loosened ahead. When all the beets were in and as soon as I collected from the sugar company I would settle with my labor contractor. I would sell my pasturage at $1.00 to $2.00 per acre, insisting that the feeding be done on the premises and that the cattle be taken out in case of rain. As one-third of the mature beets are tops, the feed left on an acre would be, even after drying out, at least two tons of tops and crown, which will be very valuable at this price. Then as soon as the feed is off, I would begin to prepare for next season's crop.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

Fullerton is moving for better roads.

Glendora boasts of a total rainfall of 32.62 inches.

Work has begun on a boulevard connecting Riverside with Redlands.

The Inter-urban Electric R. R. will connect Glendora with Los Angeles by August first.

Farmers of Imperial Valley are talking of planting large quantities of wheat next year.

The Santa Ana Bulletin says that the output of olives this year will be very satisfactory.

The beets about Santa Paula and Saticoy section are reported in the best of condition.

A ten-acre farm at Imperial sold recently for $1500, which is $150 per acre for "desert" land.

The grain about Rialto needs rain. In some places the nelds are infested with a small green bug.

The Santa Fé Railroad Company has purchased the San Diaguite ranch for the planting of eucalypts.

Coachella cucumber crop is moving to market; a thousand crates will be shipped within the next two weeks.

The mountain road, crossing the mountains north of Glendora to the San Gabriel River, is to be begun at once.

The Santa Paula Chronicle says that these are busy days with bean planting, hay making and beet cultivating.

Geo. H. Waters of the Pomona cannery is greatly improving his cannery, preparing for the increased output this season.

Bee keepers in from the hills occasionally report great quantities of bloom and bees making honey for an immense crop.

Pieces of decayed wood were brought up from the bottom of a 385-foot well being driven in the vicinity of San Bernardino.

Imperial farmers will plant corn this year during the month of August, claiming they get better results than in the earlier season.

A new variety of sorghum is being distributed by the government in the neighborhood of Yuma; also new varieties of orange seed.

Chino hay growers have raised the price of alfalfa to $10 in the field. This is claimed to be because of the loss from army worms.

New water developments are being made in the Antelope Valley. It is predicted by the Ledger that larger developments will follow.

The Claremont Horticultural Club met at the home of Mr. W. H. Howell, at Lemon, recently, having most helpful discussions on fruit raising topics.

The Imperial Valley Standard reports the consuming of water for irrigation is much less than formerly, owing to the maturing of the hay and grain crops.

On account of the disaster caused by the New River inroads to the town of Calexico, the business section of that little international town has been materially changed.

A Redlands horse man insists there is money in horses, having recently extracted a five-cent piece from under the skin of a horse which had a bad looking bunch on its leg.

The opening of the government land in the Yucaipe Valley is attracting much attention from farmers; dairymen in particular having their eye on the rich lands of that valley.

The owners of a fine German coach stallion at Redlands have filed suit against the San Bernardino Traction Company for $20,000 for the accidental killing of the animal by one of the cars of that company.

The Santa Fé Company is making extraordinary efforts to make a success of growing eucalyptus trees for tie timber. It's latest step is to send Mr. F. P. Hosp, of Riverside, to Algiers, to study into the various varieties which may be adapted to the uses of the railroad.

HORTICULTURE.

The last of the navels have been shipped from Highlands.

Redlands has an orange picker whose record is 203 boxes in ten hours.

Tomatoes are ripening and being shipped in large quantities from Thermal.

Apricots at Banning are fully two weeks earlier than at the same time last season.

The Imperial Daily Standard predicts a bright future for the grape industry of Imperial Valley.

Abundant olive crops are promised from the present appearance of the trees in most sections of the State.

Brawley is now down to the shipping of cantaloupes in a large way; the shipments now being continuous.

The Linville nurseries, at Highland, have a large force of men planting orange seed bed stock in nursery rows.

Sixty dollars per ton seems to be the prevailing price of apricots in nearly all sections of Southern California

Fullerton has a "lemon squeezer" club; the object seems to be to squeeze the initiate rather than the lemon.

The cultivation of dates in Mecca is progressing, though it will take several years before the experiment will be fully completed.

Thermal claims an output this year of 300 cars of cantaloupes, 5 cars of Malaga grapes, 10 cars of watermelons and 50 cars of tomatoes.

The Duarte-Monrovia Fruit Exchange has declared another dividend on its March oranges, making net to the growers for that month $1.35 per box.

Highlands claims to be the best fitted with cement irrigating flumes of any section in California. A large number of new flumes have been constructed recently.

William A. Taylor, Chief Pomologist of the Department of Agriculture, is in Southern California citrus district inspecting the work of his assistant, G. Harold Powell.

Several ranchers have raised strawberries this spring for consumption at Hemet. The fruit has been large and of a very fine grade, and much money has been made from them.

Placentia Orange Growers' Association claims to hold the record for loading a car of oranges. Five men recently loaded a car with 384 boxes of oranges in fifty-three minutes.

The Los Angeles buyers are in the field at Bakersfield after the early apricots. The crop will be small this season and the southern market promises to be strong for fresh fruit of that kind.

A rancher in Santa Ana exhibits a pound box of berries which holds exactly one dozen strawberries; the largest berry in the box measures five and one-half incnes in circumference.

Horticultural Commissioner Pease of San Bernardino County, is making an active campaign against the cutworms and recommends sticky flypaper as one of the most effective remedies in protecting trees.

The Tustin packing-house, learning of the record of Placentia in the matter of loading a car of oranges, mentions that four men loaded a car with 384 boxes in exactly thirty-eight minutes.

The Claremont Farmers' Club, one of the most active clubs in California, is energetic in its investigation of live questions of interest to horticulturists. Its most recent investigation has been along the line of fumigation, regarding which, a committee, headed by Prof. Cook, has made an extended report.

The Chinaman, with his usual "get there" spirit, is already monopolizing the Panama Canal zone. The government leases the land to them for garden purposes at $3 per hactare, or about $1 per acre. Already 14,000 such leases have been made to Chinamen.

Northern California

AGRICULTURE.

The Marysville creamery is being enlarged.

Butte county is to maintain an exhibit of its products at Oroville.

Red Bluff has an experimental plot of redwoods, which are doing well.

There will be one thousand acres of sugar beets planted near Alpaugh.

Cattle thieves are making depredations in the southern end of Salinas Valley.

The levee of District Number 9, in Sutter county, will be raised during the season.

Experiments in Glenn county in feeding sheep on alfalfa have proven most profitable.

Turlock is to have a new creamery at it's California Alfalfa Colony, in the near future.

Tulare Lake is still reported as rising, being two feet higher than last year at this time.

The Seropian packing-house at Fresno has been purchased by the California Canners' Association.

The Ukiah Valley Times, in a neatly printed supplement, maintains that it is the paradise of the farmer.

The Petaluma Poultry Keepers' Association is planning for a great poultry show to be given this fall.

Wheatland ranchers maintain that the present outlook for hay and grain crops is the finest in many years.

Corcoran claims the biggest turnips in the state; its rich land producing roots nine inches in diameter.

W. F. Mitchell, former manager of Colusa Butter Company, has taken charge of the creamery at Meridian.

Visalia and the country about it had a "clean up" day recently at which weeds along road sides were laid low.

The Hanford Sentinel says some of the most magnificent hay crops ever is the record this year in that section.

The Turlock Irrigation District is offering to sell bonds for the purpose of making improvements in its system.

Tipton, Tulare county, has just completed a new creamery, which is under the management of F. H. Elliott.

Watsonville is hoping for the dredging of the river, which will give her better freight facilities to San Francisco.

A creamery will be built by the farmers and business men of Ukiah; already two hundred cows being pledged.

Dredgers throwing up new levees in the neighborhood of Corcoran are reclaiming some fine land for asparagus planting.

The county road between Grass Valley and Nevada City is being improved and will be sprinkled daily during the coming summer.

The Turlock Journal reports the experiments with patent milking machines by some of the farmers near that section as successful.

A new water rate for irrigationists along the King's River canal makes them pay an increase of 22½ cents per acre over that of last year.

The Sutter county farmer appeals for better protection against the dredging gold miners who are destroying the usefulness of the navigable streams.

The Visalia Delta reports that fine quality of beets are being produced by the farmers of Alpaugh for delivery to the Pacific Sugar Company's factory at Visalia.

Wheat will be light in most sections. The early, heavy and continuous rains in the wheat sections of the State prevented sowing, and the wheat acreage is very small this year and the crops, where sown, are light.

The Farmers' Phone Company, in the vicinity of Woodland, is planning for extensive improvements of its lines; this feature, which has brought so much satisfaction to farm life, is proving very successful to the members of this company.

HORTICULTURE.

Santa Clara country prune growers are being offered 3½ cents for their prunes.

Grape vines about Yuba City are reported doing exceedingly well and a big yield is promised.

The Kerman News maintains that the owner of fourteen acres of Kerman land can support an automobile.

J. A. Graham has an orange orchard of 2046 trees in full bearing. They yielded 4307 packed boxes and the net returns were $6038.78.

The cherry crop in the neighborhood of Yuba City is largely gathered, and while not up to the usual yield still will make a large output.

The Vacaville Reporter says that pears have dropped from the trees badly and the crop will be much lighter than was at first anticipated.

The raising of tomatoes at Red Bluff has proven exceedingly profitable; a large acreage has been planted this year. Most of the output goes to the North.

California Wine Association will extensively manufacture unfermented grape juice, which has been proving so popular with trade during the last few years.

Rus Stephens, of Sacramento, maintains that the shortage of fruit in the Middle West and Northwest is going to give finest of markets for California fresh fruits this year.

The Pacific Pea Packing Company is successfully working its first season's pack at Oakdale. About 12,000 cans per day are filled with peas and stacked, ready for market.

The Fajaronian appeals to the apple growers not to spray apples for codling moth until blossoms have fallen because of the damage to fruit and death to bees that will result.

The Tulare county Times maintains that the subdivision of large tracts of land in the immediate suburbs of Visalia is bringing a great deal of prosperity to that community.

Many contracts for prunes have been signed in Sutter county on a two and a quarter to two and three-quarter-cent basis. Some growers have sold the straight lot, all sizes, for $60 to $70 per dry ton.

The Watsonville Pajaronian says that the oldest inhabitant maintains that he never saw such a flood year end with such a dry spring. Much damage to the later crops has been occasioned by the drouth.

The Fresno Chamber of Commerce has secured the services of Prof. W. W. Mackie, of the Bureau of Soils, Department of Agriculture, who will lecture to the farmers of Fresno on the reclamation of alkali lands.

Residents of Gridley are raising funds to commence suit against the gold dredgers who are working in the neighborhood of Oroville. An assessment of $1 per acre is made upon those who join in the action as a first assessment.

Residents of Southern Shasta county will petition the Government Reclamation Service to establish an irrigation district for their benefit. Waters are to be obtained in the Trinity and Coast ranges. It is maintained the system will cover about 150,000 to 200,000 acres.

Farmers are busy in Sutter county and the late crops of corn, beans, vegetables and alfalfa are likely to be very heavy. After all, the river farmers may do better than some of our high land farmers, who, owing to excessive rains, followed by excessive dry weather, will not harvest very large crops this season.

Deciduous fruit growers are pleased with the new freight rating promised by the Southern Pacific Company, though it is not so favorable as at first announced. There is a ten-cent reduction to many points which was thought to prevail, at first, to all, but some of the larger receiving points of the East will have a reduction of only five cents per hundred.

ALL ABOUT THE
Orange and Lemon
Is told in our new book on Citrus Culture, embracing every phase of the subject from the seedling bud to the final disposition of the fruit in the Eastern market. The largest and best book on the subject ever printed — 50,000 words, 100 illustrations. You will want a copy, which we will send you for the small sum of 25 cents. Remember we are the largest growers of orange and lemon trees in the world.
The San Dimas Citrus Nurseries
R. M. Teague, Prop., San Dimas, Cal.

3000 Choice
Valencia Orange Trees
One and Two Year
400 King Tangerines
St. Michael and Grape Fruit
25,000 Blue Gums
Rudis and Viminalis
Acacia, Camphor and Sterculia
(For Streets)
All for present planting. For sale by
GEO. B. WARNER
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Valencia Orange Trees
To close out remainder of our trees we will make a special price of 75c each, in quantity. These are fine two-year buds.
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Growers of Trees BEFORE BUYING **Orange Trees**
SEE MINE, OR WRITE ME ABOUT YOUR CITRUS NEEDS. IT WILL PAY YOU.
B. C. Benner Citrus Nurseries San Dimas, Cal Home Phone 1913

Budded Orange Trees
One and two years old
For Sale
Heslop & Greenwood
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With the Citrus Growers

By J. W. MILLS

THOROUGHNESS.

THERE are endless combinations of circumstances that serve to bring failure to the orange grower as with other lines of business. It takes a certain amount of close observation to know just what to do to circumvent such events that tend to bring failure. Thoroughness, if persistently adhered to will cover most of the ground.

It is not alone doing individual things thoroughly, but doing them at the right time, varying only as the demand of the trees or soil necessitates.

It avails little if, for instance, an orange grower fails to apply a remedy for scale a little too late to get the proper effect, even though the job is thoroughly and systemmatically done at the time. There are conditions to be studied in every district and it is the working out of the principles to be followed that brings about desired results, that constitute one part of the scheme of thoroughness. One man may run water on his grove for one day and do a thorough job and his next door neighbor may have to run the water four days to do it thoroughly.

Cut worms are abroad in the land and are doing much damage to some groves. Other groves are not in the least infected. Green crops grown for fertilizers are getting the blame for the loss occasioned by their presence. The green crops attract the worms, it is true, but it is due to the lack of thoroughness, that the green crops are allowed to remain near the tree at worm time. Everybody knows that their coming is entirely unknown till they or the adult insects make their appearance. We can expect them any season. We also know that the weather cannot be relied upon. Looking these two propositions squarely in the face, how can we blame anybody or anything for "getting caught" on the weather. If we stick to the principles of not putting the work off beyond a period that defines the limit of safety the knowledge of this is forced upon us every few years, then we are thorough in that line of work.

This is only a fraction of thoroughness in our work. Bailey says that a good business man will make a good farmer. A farmer who is not a good business man is invariably a poor farmer. Why is this? It would appeal to most of us at least, that a good business man must be thorough. We had a good illustration of thoroughness, very much emphasized, by the lack of it, pointed out to us today. There are two Bartlett pear orchards adjoining the city of Riverside, both having become affected with blight at the same time several years ago. Both are as good land and have equal advantages in that respect. The owner of one orchard has too many things to look after to do a thorough job of attempting to erradicate the blight and went at it in a "general way" and his orchard is now gone beyond help. The other orchard was pruned and cared for by following the instructions given by Waite in his bulletin on treatment of pear blight. He followed the details implicitly everytime he saw the necessity of doing anything. We are told that his orchard paid him as good net returns last year as some of the best orange groves.

There are several orange growers in Southern California who never saw an orange grove previous to a few years ago, but today they are pointed to as the most successful growers in the world. Hundreds of other growers have made a success of the business to just as high a degree, but not being in the business on a large scale they do not attract attention. Nevertheless, they apply their rules and put into practice their ideas as thoroughly as the large growers. In years gone by, with less knowledge of the requirements of the orange tree, many failures were made because of the lack of certain knowledge, and instead of the failure being due to the lack of thoroughness, it was due to thoroughness of doing the wrong thing. Here is where the pioneer does not get fair judgment. The new and successful grower more often than not, owes his success in a great measure, to having commenced where the pioneer left off, profiting by his mistake more than by his successes and applying the principles that have enriched him in former business occupations.

AS VIEWED IN ENGLAND.

That California oranges would ultimately capture English markets has been maintained for years and many scattering shipments have been made. How our English cousins look at our fruit is of interest, so we quote from the London Daily Telegraph. Some of the statements bear the appearance of "hot air" but it may be taken for its worth:

Any addition to the variety of choice fruits is always welcome, and as such, the large, handsome and attractive oranges from California now arriving in large quantities must be counted a distinct acquisition. These oranges are of the seedless variety, and in these days, when every point touching on the absence of risks to health is so carefully considered, the fact of the entire absence of seeds in these delicious oranges is enormously in their favor. The appearance and aroma of California oranges leave nothing to be desired. Of a beautiful shade, and with a bouquet which is delicately aromatic, these oranges will probably find a place in every well-arranged dessert dish. Considerable interest has been aroused by the persistent and strenuous efforts of the Californians to make England a regular market for the disposal of their famous fruits, and their methods of doing business are very commendable. Close upon 4000 growers have formed themselves into a co-operative association, and all are working for their mutual interests. The vast acreage represented is well-nigh incalculable, as in some instances the the groves are 1000 acres in extent. This orginization is controlled entirely by the growers themselves, but it must be understood that none of the American "trust" methods have been adopted. There is no interference with the production, or attempt arbitrarily to fix prices. Heretofore the price of California oranges in England has been somewhat of a deterrent to the general public, but now there is every indication that in the future, with increased supply, the price of oranges will be essentially moderate.

Fifteen years ago the yield of the California orange crop amounted to one million boxes, and the present year's output is estimated to reach ten times that quantity. So large an increase in so short a space of time is a tribute to the energy of the Californian producers, and there is every prospect of still larger quantities. Until within recent years these handsome oranges were entirely disposed of in New York and other large American markets, where they have always met with a good reception, but the enormous increase in the production has been the cause of the Californians introducing their goods into European markets. At the present time Californian oranges are realizing as much on the New York markets as in London, yet it is not to be allowed to interfere with the continued supplies for England, as the growers have definitely decided to popularize their fruit in England even should a large initial loss be inevitable. Every care is taken in the selecting and packing of the fruit, which has been arriving here in excellent transit in about three weeks. The oranges are sent by special trains in car loads (average 384 boxes) to New York, which journey occupies from ten to twelve days; they are then shipped on the fastest available mail steamers to Southhampton or Liverpool. The Californians are living in hopes of the Panama canal being one day a "fait accompli;" and should their sanguine hopes be realized, their oranges and other fruits could be landed in England by means of direct steamers, at much less expense than is incurred in conveying them to New York.

The first orange trees in California were those planted by missionaries, and were more for ornament than use, but in 1874 the government sent to California the first orange trees of the seedless variety. These trees enabled the Californians to commence a new epoch in their fruit growing industry, and have been instrumental in obtaining for the country a world-wide reputation for the production of high-class fruit.

"Why are you always quarreling with your wife?"

"She is always arguing with me."

"But you need not get angry; just explain to her in a calm, gentle tone of voice wherein she is wrong."

"But she is never wrong."

Plant Your Trees This Spring
With plenty of water, this is the time of the year to plant
ORANGE TREES
The growth of a Valencia tree is worth $2.00 a year for the first five years. We have now ready for sale
7000 VALENCIA TREES
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Address:
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20,000 **Citrus Trees** 20,000
Washington and Thomson's Improved **Navels** and **Valencias** Seedless Grape Fruit
One and Two-year Buds, Clean, Healthy, Vigorous Stock.
Better Secure Your Stock At Once, as the Supply Is Short.
Pollard Brothers **Alhambra, California**

The Vegetable Garden

PEDIGREE STRAWBERRY PLANTS.

PEDIGREE plants or animals are those having a known line of ancestry—presumably good ancestry.

New varieties of strawberries originate from seed sown by man or nature. A variety thus originated propagates itself by means of runners which grow out from the old plants, take root and form young plants. A pedigree strawberry plant, as I use the term, means usually, but not always, one of the above kinds (for the ancestry of some of the best varieties is not known), which has been still further improved by repeatedly selecting plants noted for general excellence as bearers from whose runners young plants are obtained to set all new fields.

From these young plants the most excellent ones are again in fruiting time selected, and so on indefinitely. But the berries should not be allowed to remain on these plants an hour longer than is necessary to prove the fruitfulness and general excellence of the plant. The berries should always be pulled before they ripen, or the seed matures, which is the process so exhausting to the plant.

It is denied that this selection does any good at all, and asserted that one plant of any given variety is just as good as any other plant of that variety. That the assertion is erroneous I know from actual and repeated tests. I have long followed this plan of selection and proven that it does tell strongly in the improvement of a variety, provided, of course, that it is intelligently and persistently carried out.

In fact, improvement in plant or animal can come in no other way. To assert that all strawberry plants of any given variety are equally good, no matter how the one may have been allowed to run down by neglect nor the other bred up by careful selection and high culture, is an error, and an error of a very harmful kind.

It is as erroneous as to hold that one herd or strain of Jersey cows is as good as any other herd or strain. Although one might have been highly and judiciously fed and bred only from the best cows and the other herd or strain had been starved and bred from scrubs for twenty generations.

The fact is that all varieties of strawberry plants as soon as originated begin a gradual process of change. It may be slow, but it is sure and almost inevitably tends to deterioration.

My plan is to arrest and even to some extent reverse this process of deterioration by raising young plants from old plants of conspicuous merit and from no others.—Colman's Rural World.

THE COUNTRY GENTLEMAN.

The time is to come when the country gentleman will be recognized as of equal importance with the city gentleman. That time will be when the country gentleman is as well educated and as poushed as the city gentleman. While we have many gentlemen in the rural districts that are well educated, we have a great number that are not as well educated as are the men of the same standing in the city. This is because the opportunities for education in the city are very much better than in the country, and also because the movement of wealth has been toward the cities for many generations.

Polish Up.

If the country gentleman lacks polish in some instances, it is because his social opportunities are less than the opportunities of the man living in the city. But the days are coming when all this will be changed, and the country gentleman will be the principal factor in changing them. It is possible for the gentleman born and brought up in the country to have all the advantages and none of the drawbacks. In the past, material conditions have been against him. The transportation question was so far from being solved that he had to depend on the elements in the city for the movement of his products and of himself as well as to supply him with the necessities of life.

Events are moving rapidly now. The telephone has placed the farmer in close touch with the town. So far as information is concerned, the farmer finds himself as well off as the citizen. The paper that is published in the morning is at his home by night, and he can read all the happenings of the previous day. That includes the market reports, which he may want in greater detail than he could obtain easily over the telephone. The electric line has placed his family in touch with many other families in the country as well as with a still larger number of families in the towns.

Best Schools Possible.

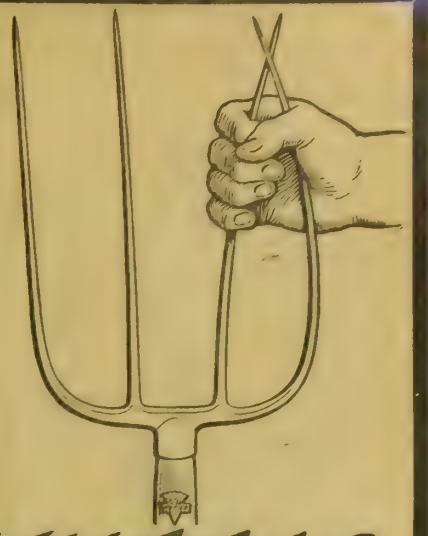
The country gentleman has now the problem of the country schools to consider, and it is a problem that will not down, as it has done in the past. The electric line makes it possible for him to solve this problem more easily than ever before. The country schools, in the main, are poor schools. They are poorly equipped and have poorly trained teachers. In many cases the pay is so small that none but poorly fitted teachers can be secured. The best teachers are snapped up by the city schools. The teacher who wants a permanent place seeks the city school. That is the rule, though there are exceptions. The country gentleman is but looking after his own interests when he demands that the facilities for education in the country be as good as those in the city. These conditions can be brought about if the country people will but give the matter their attention. The matter is receiving attention in some localities, where the country gentleman has taken up the matter and is stirring up the people to action.

MAPLE TREES.

A newspaper published in Shasta county, California, reports that Charles L. Paige, a farmer living on Clear creek, in that county, has this season made twelve gallons of maple syrup from the sap of Oregon maple trees planted within the last ten years. These trees are growing at an altitude of 1500 to 2000 feet. Mr. Paige has decided to plant many more maple trees on the mountainous portion of his ranch and hopes to secure maple sap in paying quantities from them in seven to ten years.

Give early and good cultivation between the rows of strawberry plants, then place the mulch between the rows at the proper time. The mulch will keep down the weeds and conserve moisture.

The Temper of a Fork



Try the temper of a Keen Kutter Fork—spring it, twist it, pry with it. After you've *tried* it you'll be willing to *work* with it.

KEEN KUTTER

E.C. SIMMONS KEEN KUTTER TRADE ST. LOUIS MARK U.S.A.

farm tools *don't break*—each has a fine oil temper which makes it withstand strain and keep a good edge or point. The Keen Kutter trade-mark covers Forks, Hoes, Rakes, Scythes, etc. as well as all bench tools—Axes, Hammers, Saws, Planes, Adzes, Chisels, Augers, Bits, Braces, Gimlets, Bevels, Squares, Drawknives, Gouges, etc.

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AND Is Going Up In ALBERTA

You know how many times you have missed opportunities by putting off—The man who takes advantage of his opportunities is the man who gets rich and makes his money easy.

You have heard how people are making money in the rise of land values in Alberta, Canada. Perhaps some of your neighbors have gone there and invested, and if they have they have made money.

But have you taken advantage of the great opportunities offered there?

Land in Alberta is constantly rising in value--It is not very high yet, but it is going up again this year and next year.

Why?

Because in Sunny Southern Alberta is to be found as good land as lies out of doors—Because thousands of farmers from the United States and other countries are going in there and taking it up every year—Because enormous crops of almost all kinds of grain and vegetables can be raised there and sold at high prices—Because it is the greatest cattle, sheep and hog country on earth—Because almost every profitable product of the farm can be raised at the lowest possible cost and sold right at home—Because dairying is more profitable there than in almost any other spot on earth.

Aren't those reasons sufficient to convince you that land is going to continue to rise in value in Alberta.

People have just begun to learn what a a great place western Canada is—They have just begun to learn that it is not the coldest country on earth, but has a fine climate both winter and summer.

People have just begun to learn that there are good schools in which to educate their children, and that the neighborhoods are made up of much the same class of people that they have surrounding them at home in the United States.

You can buy Southern Alberta land cheaper right now than you will ever buy it again.

Write for our literature which tells you all about our irrigated, non-irrigated and combination farms containing both irrigated and non-irrigated lands. We will tell you how to take a fine trip through Alberta at a very low cost, and we will tell you how to buy as good land as there is in Alberta on terms so easy that anyone can own a farm.

CANADIAN PACIFIC IRRIGATION COLONIZATION CO., Ltd.
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Sales Department, Canadian Pacific Railway, Irrigated Lands, 5

MELON VINES

Dusted with **Devil's Dust** will grow faster, and be absolutely free from vermin. It is guaranteed to cure the destructive aphis that strip the vines of foliage. **Devil's Dust** will make the vines produce

More Good Fruit

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315 South Main St. **Henry Albers Co.** Los Angeles, Cal.

Does this stream of water look good to you?

It certainly does to the two men standing beside it. They are the President and Treasurer of the company to whom the plant belongs.

It is raising 40 inches of water from 250 feet below where they are standing. This water goes into a reservoir 18 feet above the pump through an 8-inch pipe-line about one-eighth mile long and you cannot see a pulsation in the discharge if you try. It has been doing this for over a year. There have been no repairs, not even new leathers, and it runs better, if such were possible, today than it did a year ago.

How many pump users can say this?

It shows conclusively that it pays to install good machinery.

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POMONA MANUFACTURING COMPANY
Corner of Bertie and Gibbs Streets POMONA, CAL

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1¼ inch.....	3c per ft.
2½ inch.....	4c "
4 inch.....	5c "
6 inch.....	7c "
9 inch.....	10c "
13 inch.....	15c "

COATED

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2½ inch.....	5c
4 inch.....	6½c
6 inch.....	8½c
9 inch.....	12c
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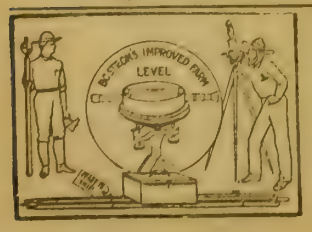

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COAST AGENTS.
Send for Circular.

California Horticulturally

By JOHN ISAAC, Sacramento, California

A PLAGUE OF CUTWORMS.

THE army worm has again appeared in destructive numbers in many sections of the State and gardeners especially, are complaining of its ravages. There are several species of insects which have the gregarious habit, which, in their larval stage, live in great communities and, by some instinct, move in masses. Chief among these are the cutworms, the young, or larval form, of a night-flying group of moths to which the common name of owlets is applied, from their nocturnal habits, their soft downy plumage and their general shape. As a rule, insects of this class are inconspicuous in color and markings and so strongly resemble the coloration of objects on which they repose during the day as to escape notice. The eggs are laid on low-growing vegetation and as soon as the young worm is hatched, it works its way toward the ground into which it burrows during the day coming forth at night to commit its depredations. Many of them climb trees, shrubs and high-growing plants, and are hence known as climbing cutworms. When they have exhausted the food supply of their breeding grounds, they will start for fresh pastures and sometimes travel in such enormous numbers that one who has not seen them on the march would not credit the extent of their numbers. They will cut through the stems of low-growing tender vegetables and leave a field as bare as though it had been gone over with a mower. The cutworm is a heavy bodied insect and it can be stopped from climbing young plants, as tomatoes, cabbages, etc., by placing a tin cylinder, inserted an inch or two into the ground, around the plant. Old tomato cans, fruit cans, etc., with the ends melted out answer the purpose admirably. Where the pests are marching in numbers, a trench with perpendicular sides dug across their path will trap them in quantities and they can then be destroyed. Poisoned bran has been found an effective remedy for them. Thoroughly mix in a dry state 50 pounds of bran and one pound of Paris green, add water, a little sweetened with sugar, until the whole is thoroughly wet but not sloppy. Army worms are very fond of this mixture, prefering it even to vegetation, and can be killed off by thousands. They eat voraciously of it and then crawl under ground, acting as their own sexton and fertilizing the soil with their bodies.

CALIFORNIA EXPERTS WANTED.

A few monhts since A. D. Chandler, of Brookline, Mass., was sent to California by the citizens of his town as an agent for the purpose of studying California's methods of fighting insect pests with their natural enemies. While here, he made a thorough investigation and made a favorable report. Since then he has addressed several meetings in Massachusetts on the subject, with a view to using parasites in the great fight now being waged against the Gypsy moth in that section. At a late meeting of the Citizens Association of Medford, Mass., at which place the Gypsy moth was first introduced, it was resolved to call upon the legislature for $5000 for "the seasonable examination of the parasite work of Massachusetts in suppressing the Gypsy and Brown Tail moths, to be made by such experts from California as the governor of Massachusetts may approve."

RECOVERING FROM THE FLOOD.

During the high waters of the past winter, when the island sections of the Sacramento and San Joaquin rivers were overflowed, it was feared that on such lands there would be no crops raised this year. It now develops that matters were not so bad as they might have been. The greater part of the water has been drained off, and the land sown. Crops, on such overflowed land, are already well advanced and will give a good harvest. In hop yards which were under water, the vines have been little injured, the water has entirely receded and the land is in better condition than before the overflow. The great asparagus fields are yielding well, and altogether in spite of early apprehensions, little damage was done by the high waters to the farming lands.

INSECTARY FOR GOLDEN GATE PARK.

After the great earthquake and fire in San Francisco, it was discovered that the insectary in the Ferry building had been destroyed and most of the beneficial insects killed. Some arrangement had to be made to save those that were left at once, so temporary quarters were provided in Sacramento and for a year past beneficial insects have been bred there. Being far from the port of San Francisco and lacking in conveniences for shipping and propagating, it was determined to return to San Francisco as soon as possible. State Horticultural Commissioner Cooper, for some time past has been negotiating for a location for an insectary in the Golden Gate Park and the Park Commissioners have at last granted him a site for such building, which is to be erected and stocked immediately. The parasite service, on account of limited facilities, has not been all that could be desired for the past year but it is hoped, with the new building and improved facilities, to bring it back to the standard of its efficiency before the fire.

COMYS FUSCA.

Deputy Commissioner Ehrhorn sends word that all fruit growers who desire colonies of Comys fusca, the internal parasite for the "Brown Apricot Scale" (Eulecanium armeniacum) infesting prune, apricot and peach trees are requested to send in their applications as early as possible —not later than May 25., as this parasite will probably not be available after that date. They are furnished gratis. Apply at the office of

State Commissioner of Horticulture, Room 11 Ferry Bldg., San Francisco.

SPRAY FOR LEAF CURL.

A peach-grower has handed in the following recipe for curl leaf in peach trees that he says is an infallble remedy:

Dissolve 8 pounds of blue stone and 12 pounds of unslacked lime in water separately, when thoroughly dissolved put them together and add 50 gallons of water. Spray trees lightly two times a year, just after picking and again in December. Smaller quantities can be made by using the same proportions of blue stone, lime and water.

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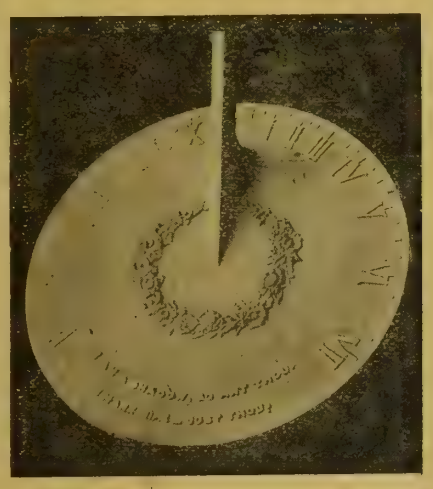
The Ornamental Garden

THE SUN-DIAL.

BEHOLD, I will bring again the shadow of the degrees, which is gone down in the sun-dial of Ahaz, ten degrees backward. So the sun returned ten degrees, by which degrees it was gone down."

In this statement, made in the time of good old Hezekiah, more than seven hundred years before Christ, is a reference to the sun-dial, which, at that time, was the principal means of determining the time of day. For many hundreds of years after that, and probably many hundreds of years before that, some claiming back as far as the beginning of the human race, this picturesque feature occupied a prominent place in many gardens. In recent years, however, it has not been used as in those good old days, because the more useful watches and clocks have given us more corect, or at least more convenient, answer to our question as to the time. Be that as it may, this picturesque feature of the garden has offered to many opportunities for beautifying cozy nooks in the garden. In more recent years, the more wealthy garden makers



have brought it back to life and the interest which it inspires on the part of those who see it for the first time has been such that it is greatly increasing in use. Some of the most beautiful lawns in our larger towns and in our public parks have added this feature.

In the City of Los Angeles, Mr. Wesley Clark, Judge Silent, Mrs. Geo. Goldsmith, and the Barlow Sanitorium are among those who have seen the beauty of this historical timekeeper. These were constructed and placed by Mr. W. A. Seymour, a man who has given much study to the construction of sun-dials.

The art of constructing sun-dials at, and before, the time of Christ to suit any place and situation was an important branch of mathematical study. Today, it is more of a matter of curiosity, and a few like Mr. Seymour, study its more technical features and are prepared to erect these dials to fit any situation, or to be placed in any latitude. They are usually constructed of bronze or of brass, though we have seen them of immense size constructed of wood with the gnomon, or style, extending several feet into the air, and parellel with the earth's axis, or in other words, pointing directly at the north star. Thus the sun's shadow falls upon figures made by the gardener in flower-beds in a circle on which the shadow of the style may fall.

This form of dial is less common and not so picturesque as the pedestal with a bronze plate on which may be moulded a motto or inscription according to the taste of the garden owner. The one shown in the illustration on this page is a very apt inscription. Amongst others we may mention: "I only reckon the bright hours." Which may be taken as a pretty good motto for us humans as well.

"Time wastes us, our bodies and our wits,
And we waste Time, so Time and we are quits."

"Abuse me not, I do no ill,
I stand to serve thee with good will;
As careful then be sure thou be,
To serve thy God as I serve thee."

"The hours which my faithful shadows point out to thee,
Remember, have been taken from thy life."

"The last hour, to many, perhaps to thee."

"As a shadow, such is life."

"I mark not the hours unless they be bright,
I mark not the hour of darkness and night;
My promise is solely to follow the sun,
And point out the course his chariot doth run."

CATALPA.

The growth of this tree is rapid. Three and four-year-old trees furnish quite a good deal of shade. However, for cross ties and for other purposes the trees must be at least 15 years old from seed. I have known trees which were claimed to be 100 years old and 4 or 5 feet in diameter. The wood is not very strong, but lasts well, either as posts or for ties. I know of catalpa posts which have been in the ground 30 years and are still sound.

Be sure and get Catalpa speciosa. Another variety, Catalpa begnoniodes, is a very inferior tree. It seeds more freely than the other variety, consequently in many places is more common. It is a smaller tree and the wood does not last as well. The only way of telling the difference in the seed is by the size and number. Catalpa speciosa has the largest seed, but there are not very many seeds to the pod, while the other variety has a great many in each pod.

The desirable variety grows well in nearly all parts of the United States and there is no reason why it should not be planted more largely than it is at present. It is a beautiful tree for ornamentation, as it bears large, white blossoms in the spring, making it very attractive. However, the leaves fall early and for that reason it is objected to by many for ornamental purposes. The seed can easily be obtained from nurserymen. —Ex.

DESERVED TO LIVE.

In a rural justice court in Georgia recently an old negro, whose testimony had been questioned, said in his own defense:

"Jedge, I'm a good man. I been a-livin' roun' heah ten years. I ain't never been lynched; en de only horse I ever stoled throwed me en broke my two legs!"

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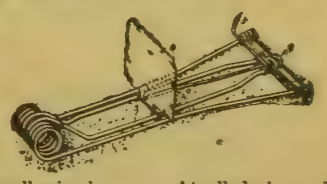
MACABEE GOPHER TRAP



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RED FLOWER POTS $2.50 Per 1000

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Sugar Beet Pulp
(Kow-Sauer-Kraut) For Cows

Q. What is a cow?
Ans. She is a square critter, with a peg at each corner to stand on.

The Cow Talks: I have also been called a "milk-machine." To a nail-machine they feed wire and get nails. So they expect to feed me wire-y, dusty musty hay and get milk. Nothing in it. Don't expect to get wire nails from a nail-machine without feeding it wire, nor milk from this milk-machine when fed on wire-y hay mostly trodden under my feet.

I'll tell you what to feed me—give me Kow-Sauer-Kraut when I come in from the pasture.

Kow-Mathematics: Then I'll give you 32c worth of milk for a cent's worth of pulp. Besides, I figure I'll get fat at the rate of about a pound a day. (MRS.) A. LEAN COW.

P. S. You can get cured Kow-Sauer-Kraut at $1.00 per ton from the silo of the

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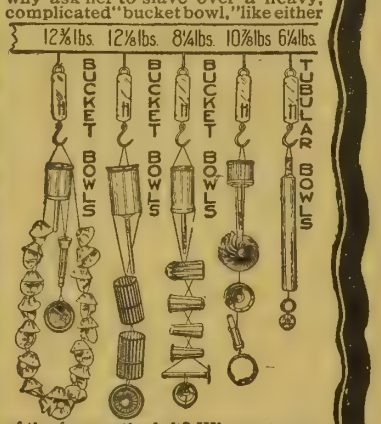
Of course your wife would try to wash even the worst cream separator bowl properly twice every day. But why ask her to slave over a heavy, complicated "bucket bowl," like either



of the four on the left? Why not save her hours of cleaning every week by getting a Sharples Dairy Tubular Cream Separator with a simple, light, Tubular bowl, easily cleaned in 3 minutes, like that on the right? It holds the world's record for clean skimming.

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By Mrs. Minna E. Sherman, Fresno, Cal.

CORN.

THIS giant grass is a native of the new world. Indeed so little was its food value known in the old world that only a few years ago the United States Government maintained corn food shows in the principal cities of the old world where practical demonstrators made corn-bread and Johnny-cake to give to the visitors. I had an artist friend, that came from below the Mason and Dixon line; one day he was strolling along in Munich feeling very far from Dixie land, when a familiar whiff in the air carried him back across the sea. He paused and drew a long breath, looking around he saw a small shop filled with frauleins and pushed his way in, to see corn bread passed out to taste. He waited and was allowed after the crowd had gone away to make some corn cakes. The joy of the familiar taste was heaven to him. Now the people of Europe are using corn after American methods instead of merely regarding it as cattle food.

At present the corn crop has a value that does not make it the cheap adulterant of wheat flours. The Pure Food Law forbids the use of corn in wheat flour. The bread, however, is certainly better when a little corn is added to it, a teacup of fine white corn meal added to each five cups of wheat flour used in bread baking makes a better keeping bread than when it is made with plain white flour.

Planting.

Now is the time to sow the corn field. From the first of April to the Fourth of July corn can be planted and a crop matured in the valleys of California. In the coast regions where irrigation is not practiced the corn is usually sown earlier than in the interior. The interior valleys have later frosts, not usually heavy enough to damage fruit, but little light frosty fingers laid morning after morning on the tender corn blade as it springs from the ground retards its growth. It is a little discouraging to anything to meet a cold reception on its first peep at the bright world. So the corn when discouraged stands still for a while before starting off into vigorous growth. Now, while it may be good for spiritual growth to stop and listen to the life forces around, it is not conducive to bodily vigor for the corn plant to turn to growing anything but a vigorous body.

Vigor.

The secret of growing any crop to perfection is in making its surroundings perfect. There must never be a halt or stop in the growth of an annual crop. The lost time is never caught up again. The time therefore to prepare the soil and make the conditions perfect is before the crop is sown at all. Then watch it grow! It seems to leap out of the ground almost by magic; first the tender blade, then the tassel and then the full grown ear. Before the mind has grasped the wonderful beauty of the plant the leaves are yellowing and harvest is at hand.

Maximum Crops.

In growing corn in California we have been satisfied with a minimum crop. A little selection of seed and a great deal better cultivating of the ground would enable us to do as well as the farmers of the Middle West. Sun, water and soil we have of the best. The sun in the San Joaquin Valley, it never fails us; it is our pride that we have more sunshine than any where else in the world. Whew! when it soars up, it knows how to stay up in the sky, during the long, long July days. The leaves rustle and crackle on the vines and trees; they are full of the eager joy of growth.

The water comes freely from the mountain streams down the canal, clear, bright, cool, soft water and the thirsty land drinks its full, for there is no cement lining in these ditches and the water sub-irrigates the land freely. Now, with all this the yield of corn is only about half of the maximum crop of the corn-belt states. Half the growers of corn fail to realize more than 25 bushels to the acre. One hundred bushels to the acre should be produced many seasons. Fifty bushels is now looked upon as a fair crop while seventy-five is a good crop. Yet the hundred bushels has been frequently reached so that it is not asking too much that here where we have conditions under control, as to heat and water, that this should be our expected crop. We fail in cultivation, for the New England crops with a short summer and poor soil average more bushels per acre of corn than any other portion of the United States.

Alfalfa.

Corn and alfalfa! Alfalfa and corn! Which shall we place first as the greater food for the stock man? Together they so perfectly supplement each other that the great stock countries of the world should grow up where both these crops grow to perfection. The corn crop in the East when it fails is usually owing to weather conditions. When it fails in California the two reasons are, poor seed and poor care. The seed of the best dent variety should be purchased in the East from the grower, and then after it is grown here, make a selection of the best ears for seed. Gather from the stalks that have two or three well developed ears to a stalk, twice as many ears as there will be needed for next year's crop. Then some leisure days spread the corn on a table in the packing house and select the ears that have perfectly developed grains of even size to the end of the cobs. Repeat this selection from year to year and the corn will improve rapidly.

Varieties.

Naturally in an article like this the people skim through it and ask what varieties are recommended. Now I find that a hard question to answer, because corn cross-pollinates freely and the same variety by name grown in different sections of the country is quite a different appearing corn. I have found the best way is to buy a dent corn from a careful grower in the East. I received three weeks ago a new supply of two hundred pounds from Lancaster County, Pennsylvania, from a man that has raised banner crops for several years. The freight on the corn was six and a half dollars so you see that it costs something when it arrives here. This corn will, however, last as a start for eight or ten years. Enough will be sold

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See us for Sanitary Milk Bottles...O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

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that because we do not take whole page ads in the papers that we have nothing to sell. Just try us and you will be agreeably surprised. We have all kinds of fine buys on our Oakland list and a long list of City and ranch properties all over California and the east. Cut this out and mail it to us with your name and address and we will send you, free of charge, "The Indicator" for six months, which contains our list. If you have any property for sale we can sell it for you if the price is right. It makes no difference where it is located as we have representative agents in all the leading cities in America. We do not ask for a long-winded, exclusive contract, only a ten days agreement. Write us at once.

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FOR SALE—RICHLY-BRED YOUNG bulls from cow having High Official Yearly Records. Also a few heifer calves of best breeding. For particulars address

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Our Herd Bull Sargent Fox, 64833

As we have dispersed our herd, except a few heifers for home use, we are forced to offer for sale this valuable sire. We will sell him at a low price to a breeder who is in a position to give this bull a chance to make a record.

Leffingwell Rancho. Inc., Whittier, Cal

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High Grade Stock of Best Strains.
Young Stock For Sale.
M. Bassett - - Manford, Cal.

from next year's crop to the neighbors to pay for bringing it here.

Irrigation.

The first steps to be taken for the corn crops on the ranch will begin the end of next week, or as soon as the hay is cut and made on the oats field. The land will be roughly irrigated, then enough furrows run to carry water to completely soak all parts of the land. When this is finished the disks will run over it both ways, and then the plows will follow to throw out a deep furrow. This furrow will be down ten inches below the surface, the furrows will be four feet apart.

The cultivators are run on the space between the furrow down deep to make the soil loose and friable to retain the moisture; while this is being done the corn planter is at work putting in the corn in the furrows. After a few days the corn is up and the cultivators are run to keep down the weeds. Now, in calling the furrow ten inches deep it is understood that the aim is to have it that deep, but in actual practice it will average six inches only. In this world we have to follow Emerson's advice and hitch our wagon to a star. In laying out the work we must tell men ten when we expect to average six or seven at most.

HOW TO FEED A DAIRY COW.

A practical dairyman writes the Jersey Bulletin on feeding his cows. He says: "Our herd numbers in all fifteen head. Our cows are grained the year round, have the run of pasture in summer, and are well housed in winter. Our summer ration for a dairy cow is barley chop, about four pounds per diem. In winter we use shredded fodder for roughage; grain ration, eight pounds per day per cow of a mixture of cornmeal, barley meal, malt sprouts and cotton-seed meal, mixed in the required proportions to produce a feed which would analyze one part of protein to six of carbohydrates. Our cows are not allowed to stand alongside a straw stack for shelter when the thermometer shows something a little less than zero, but are kept in the stable, and even watered there.

PURE WATER A NECESSITY.

A New Zealand agricultural journal says: "Dairy cows have the ability to make pretty good milk when drinking pretty bad water. They would drink more water and make more and better milk if they had better water to drink. It has been proved over and over again that tainted water will impart its taint to the milk of cows which drink it. Not only this, but cows drinking from sagholes holding stagnant water cannot be kept in healthy condition any more than can people. We know how careful people are with regard to their drinking water.

"Cities spend thousands and thousands of pounds in getting a pure water supply. There is no more common source of sickness, disease and death than impure drinking water, and it is just as necessary that a cow should have pure drinking water as a person. There are numerous instances on record where bad flavors in milk, butter and cheese have been traced to an impure water supply for cows, and when the water supply was changed the bad flavor disappeared."

MIXED RATIONS.

The Kansas Experiment Station has completed a feeding test with hogs in which corn, alfalfa and meat meal were used. The hogs were divided into three lots of ten each and feeding commenced October 9, 1905, and continued for 112 days. The initial weight of each hog was about 100 pounds. The first lot consumed 7690 pounds of corn meal or 6.86 pounds per hog per day and gained .99 of a pound per hog per day. The second lot consumed 7848 pounds of corn meal and 1552 pounds of meat meal, being seven pounds of corn meal and 1.38 pounds of meat meal per hog per day, and they gained 1.76 pounds per hog per day.

The third lot consumed 7875 pounds of corn meal and 1340 pounds of alfalfa per day, being 7.03 pounds of corn meal and 1.2 pounds of alfalfa hay per hog per day and they gained 1.18 pounds per hog per day. The corn meal was valued at 62 1-2 cents per 100 pounds, the meat meal at $2 per 100 pounds and the alfalfa hay at 40 cents per 100 pounds.

The cost of gain was $4.33 per 100 pounds for lot 1, $4.13 per 100 pounds for lot 2 and $4.05 per 100 pounds for lot 3.

With corn meal alone it took 692.8 pounds of meal to make 100 pounds gain, a much poorer showing than the average of such experiments.

ALFALFA AND BRAN.

"It is not generally known," says the Journal of Agriculture, "that a ton of alfalfa contains practically as much protein as bran. The farmer who is paying from $20 to $25 per ton for bran to feed his dairy cows would find it much cheaper to raise alfalfa."

Prof. Henry, formerly of the Wisconsin Station, and an authority on feeding, says that "when we compare alfalfa with wheat bran we find that the former is practically the equal of the latter in protein. It would seem that the alfalfa plant offered a solution of the grain feeding problem in this day when the price of mill stuffs is soaring upward. Alfalfa can be grown in nearly every section of the country. There are some things that we may have to learn about the culture, but we should set about to learn that something as soon as possible."

We occasionally hear dairymen lamenting the fact that bran has advanced in price so rapidly that it is no longer a profitable dairy feed. This need not alarm anyone who resides in sections where alfalfa can be grown."

Put a mixture of salt, soot, wood-ashes and sulphur into a box or trough and leave it where the cows can get at it. They will keep healthy with but little dosing with other medicines. Soot is a liver corrector.

Cows that have grain feed regularly will eat corase fodder up cleaner than those wholly upon hay and straw, they have a better digestion.

Slop-fed hogs should have a little solid food every day such as corn, boiled potatoes, etc. See that they have a dry bed every night. Damp sleeping places cause rheumatism.

The Greater National Dairy Show will be held at the International Live Stock Exposition building, Chicago, October 10 to 19.

"Why do you call your dog Thirteen?"

"Don't you see he's lame?"

"Yes; what of it?"

"Why, he puts down three and carries one doesn't he?"—Record

J. J. Cairns of Lindsay had a car of oranges which netted him $990.70.

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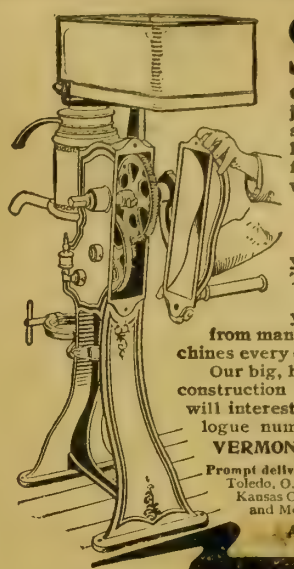

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U. S. CREAM SEPARATOR

you wont have to look any farther. It has them all. That's why it outwears all other makes.

Durability is what the "cheap" separators lack, yet it is most important. We have received letters from many users of the U. S. Separators who have run their machines every day for 10 years and more with entire satisfaction.

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will enable you to get the greatest results from your cows.
A 20TH CENTURY BABCOCK TESTER and an IDEAL MILK SCALE will indicate just what each cow is doing, and inform you what returns you should receive from the creamery. Some cows are profitable, others are not. Get rid of the poor ones and buy good ones. Ask for catalogues A and B.
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Stands up to its work, no taking off wheels.

STRONGEST PRESS ON EARTH. ALL IRON AND STEEL.

Constructed especially for heavy California hay baling. Write for proposition to ship you a New Century on ***10 Days Free Trial.*** Sold on easy payments. Shipped direct from warehouse in Los Angeles. For full particulars address ***Capito Carriage Co., 12th and Main, Los Angeles, Cal.***

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Buy the World's Famous Egg Food No. 4

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IF YOU WANT EGGS
YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Haphazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultry men who have used these machines have supreme confidence in their ability to hatch and breed. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for the greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. Filcher, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

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Mitchell's White Leghorns Exclusively

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200-250 Egg Fowls | **WHITE WYANDOTTES** | Always Win

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A. L. R. MANTZ — Rural 21, Box 98k — SAN JOSE, CAL.

Beef, Blood and Bone Will Make Your Hens Lay

This is not a medicine but a high grade nitrogenous food. Write for free booklet, "How to make Hens Lay." Our Poultry Foods are sold by all local dealers and manufactured solely by

The Pacific Guano and Fertilizer Co.

Also Pioneer Manufacturers of *High Grade Fertilizers*. Indiana and Yolo Sts., San Francisco, Cal. Write for our free booklet, "Farmer's Friend." Valuable to all farmers and ranchers.

Bemis Plymouth Rocks

Barred and White

Prizes Won at Alameda County Poultry Association Show, Oakland, 1907—22 Regular Prizes and 3 Silver Cups. Can furnish best birds and eggs at reasonable prices. No incubators lots furnished

Mrs. Florence E. Bemis, 1757 19th Ave., Oakland, Cal.

The White Faced Black Spanish

Are famous as layers of large white eggs at all seasons of the year. We won all prizes at the Breeders Great Show, 1907. Choice Cockerels For Sale, $5. Eggs, $1.50 per 13, $4 50 per 50, $8 per 100. Special matings, $3 per 13. Fertility guaranteed.

Mrs. W. H. O'Connor — Lock Box 112, Dolgeville, Cal.

Black Minorcas Exclusively

Our Minorcas excel in size and egg production. All prizes at the late Los Angeles Show were awarded our birds. Stock and eggs for sale. Send for our new illustrated catalogue.

Perham & Wheeler, R. F. D. No. 123, Lordsburg, Cal.

Profit in the Poultry Yard

By FRANK H. THOMAS, Los Angeles, California

DOES POULTRY CULTURE IMPROVE THE BREEDS?

WE know of nothing that has been so improved, by carefully selecting and breeding, as poultry. We are told that all our domestic fowl originated from the jungle fowl, whose only duty was to lay a clutch of eggs, from ten to fifteen, hatch them, and raise what she could. Those of us who have seen the original jungle fowl, from the jungles of India, know that they are far from ideal, and that a bird that will lay only one clutch of eggs and then set could not be bred with profit in this day and age of the world.

Not So Far Back.

But it is not necessary for us to go so far back to get our comparisons—say twenty-five years ago, yes, ten years, and see what we can find and the improvement that has been made. Take the standard bred Barred Rock of today and ten years ago. In looking over show reports we find that the scores ran as high on an occasional bird as they do today; in other words, we will admit that specimens were bred as near standard requirements as they are today, but what we wish to impress on your mind is that where we found one specimen that would score 93½ points then, we will find ten today. In other words, we had ten times as many culls then, as we do now; that our flocks have been selected and culled until they will reproduce themselves to a marked degree.

The Utility Side.

So far we have looked only to the fancy, now let us study the utility or practical side. Some will tell us that in breeding standard bred poultry, we lose sight of the utility points, but this is a mistake. We will take the man who breeds any standard variety and follow him through one season. After he has his pens mated, he will give them the best possible care and treatment to get them to laying as early as possible, as he must have early eggs and chicks for his early trade; unless he can get them to laying early in the fall, and keep them at it all winter, he will not reap the results of an early trade of eggs for hatching. After he hatches his chicks, they are pushed to the limit. They are culled early, if they are Mediterraneans. The cockerels are sold very young for squab broilers, thus giving more room for the care and development of the pullets. If he has the larger breeds, the culls will be, very often, fed for fryers or roasters, but he will have his pullets separated early and developed to sell for early breeders and show birds.

Thus we see that every effort is used to improve his flock, only his best birds, those that have proven to be good layers, are kept the second year for breeders.

He can't afford to let his hens set, as he can make more by using them as egg machines and hatching with incubators.

Two-Hundred-Egg Hen.

How many of us, ten years ago, ever thought of a flock of hens, or an individual, that would lay two hundred eggs in a year. We saw an occasional advertisement, or read an article, that some one had a hen that had laid two hundred eggs in a year; but most of us looked on it as a fairy tale, but today we have the two-hundred-egg hen and even better than this, and this has been accomplished only by careful breeding and selecting.

This selecting can be done in many ways. One can watch the hens and pick out those that are never seen on the nests, or there are a number of books published that will greatly benefit one along these lines. In the near future we expect to publish an article compiled from the report given out by the Polytechnic School at San Luis Obispo, in which only simple methods were used that can be applied on any ranch, or even by those who have only a few fowls on a city lot.

Size Increased.

Not only has the egg production been improved, but size and early development have been carefully considered in every instance. The specialty clubs have sought to improve and encourage the different breeds and varieties by offering special prizes at the exhibitions, and getting up special catalogues, publishing the good points of the different breeds. They have also had members and special committees to meet with the Revision Committee and in many instances have the standard weights raised from one-half pound to one pound on each bird.

AROUND THE YARDS.

We read much about care and condition of yards and runs. The first and about the only thing we read is to spade up the runs, turn under their accumulated filth. This is very good but spading is not sufficient for all kinds and conditions of soil. If you have a sandy, or sandy loam, that does not bake, spading and cultivating is all right; but should your soil be 'dobe, or soil that bakes, as some does it would take a pick to turn it. The best kept yards that we ever saw were treated each spring with a coat of sand or gravel to the depth of several inches. As the sand would get foul it was raked up and put in a pile in some convenient place. When there is enough to warrant, you can take the garden hose and wash it, the filth will settle to the bottom; you can use the clean sand again and the loss of sand will not be great.

Mrs. H. A. N., Santa Ana, writes for instructions for proper housing of brooder chicks after they are taken from the brooder to prevent crowding.

Chicks when taken from the brooder should be put in runs with a colony house for each run, and only chicks that are of one age should be confined to a run, as the larger ones will crowd out the smaller ones at feeding time and will tramp on them at night, thus killing and injuring the weaker ones. Your roosting house should be large enough to comfortably house the chicks confined to the yard or run. To prevent crowding, and to teach them to get up on the perch at night it is well to have a slat floor about three or four inches from the ground made of lath turned edgewise, about one-half inch apart; above these about four inches, you should place your roosts. The chicks will take to the perch very quickly; after they have learned to roost on the perch the slat floor can be removed and cleaned, ready for the next colony.

Don't neglect the houses and nests these warm days, as the vermin will soon get a foothold; it is much harder to get rid of them, after they get a good start, than to keep them down in the first place.

FATTENING CHICKS.

There is probably no animal on the farm that is capable of making more economical use of food consumed than is a young pullet or a cockerel. As a general rule farmers market their pullets and cockerels before they are in the best condition for marketing. They should be fed for at least three weeks prior to shipment. In the corn belt there is probably no grain better adapted for fattening chicks than corn. During the first two weeks of the feeding period, however, it is well to mix with it more or less of animal food. Some of the large poultry feeders use as much as 20 per cent of animal food mixed with the grain ration. It is questionable whether such a large quantity can be used with economy on the average farm, for the reason that intensive feeding is seldom practical, and the consequent needed care is not usually given, but as much as 10 per cent of animal food mixed with the corn ration should give good results.

For fattening purposes it is better to fed ground corn and, if possible, to moisten it with milk. Milk is rich in proteid matter and helps balance the ration. The last week or ten days of the feeding period corn may be fed to the exclusion of all other feeds. Bear in mind tuat when feeding chicks for the market they should not have too much exercise. During the first two weeks they may run about in a comparatively small yard, but during the last week or ten days better results will be secured if chicks are penned up in very small pens where they can practically secure no exercise at all. Some of the large English feeders allow their chicks no exercise whatever. They feed them on the intensive plan and in many cases use what is called the cramming method. For two weeks they feed the chicks all they will eat of ground feed, such as hulled oats and barley mixed with milk, and as soon as the appetite of the chicks wanes they force the feed into their crops by means of a machine especially constructed for that purpose. In this way it is claimed that more rapid gains are secured and the meat of such chickens is also very tender and juicy. —Farmers' Tribune.

WATER GLASS.

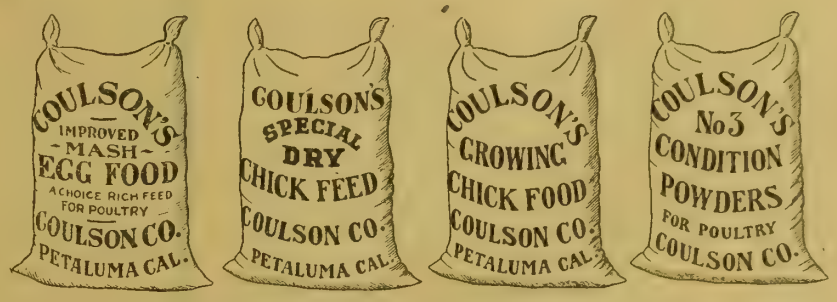
Three months ago I put down fifty dozen eggs in wooden pails using silicate of soda, nine part of water to one of soda. I covered the pails tightly as possible but lately noticed some evaporation. I have just transferred them to a barrel and found in one pail the liquid had become about like jelly and the eggs in the bottom were attached to the wood with a white, hard sediment so that the shells were broken in detaching.

I secured the soda from a large San Francisco firm and it was supposed to be pure. It is about the consistency of light syrup and of a light amber color. Can you tell me what causes the eggs to adhere to the wood and is it right for the liquid to become like jelly after a few months? It will be necessary to wash or wipe thoroughly every egg when taken from the liquid (or jelly); will this injure them?

We think the trouble with your eggs is that you did not use enough water in the first place. You should use one part silicate of soda (or Water Glass) to ten parts of water. Some time back the Cultivator published an article of some length on preserving eggs with soda (or Water Glass) and

Coulson's Mixed Poultry Foods

Are Better Than Ever



The Coulson Company's Standard Brands of Poultry Food

Feed your chicks on

Coulson's Special Chick Food

for the first six weeks or so, till they are well feathered, strong and active. Then keep up their continuous and rapid growth by feeding

Coulson's Growing Chick Food

up to three months old, when the pullets can be fed

Coulson's Improved Mash Egg Food

This will insure you healthy stock and plenty of eggs. At this time of the year a little of

Coulson's No. 3 Condition Powders

are most beneficial for keeping the hens healthy, after the laying season, and for getting all eggs possible before they begin molting.

Coulson Poultry & Stock Food Co.

Petaluma, California

Germain Seed Co., Los Angeles, Distributing Agents for Southern California

Why Poultry Die

An enormous amount of money is lost to poultrymen through simple neglect. Hens die for want of a proper tonic to prevent indigestion or ward off disease. All fowls, especially those in confinement, need a corrective or tonic—something to assist digestion, and compel a healthy activity of each organ.

DR. HESS Poultry PAN-A-CE-A

is such a tonic. It contains iron for the blood, and nitrates to eliminate poisonous matter from the system. Poultry Pan-a-ce-a is not a stimulant; it acts in a natural manner, compelling the organs of digestion to convert the largest possible amount of food into bone, muscle, feathers, eggs, etc. Hence, it makes the hen healthy and prolific.

Dr. Hess Poultry Pan-a-ce-a has high medicinal properties, being a cure for gapes, cholera, roup, indigestion, etc., and by its special germicidal principle, it destroys the cause of nearly all poultry disease. It is the prescription of Dr. Hess (M.D., D. V. S.) and is endorsed by the leading poultry associations in United States and Canada. **Sold on a written guarantee. It costs but a penny a day for 30 fowls.**

1½ lb. package, 35c. 12 lbs. $1.75
5 lbs. 85c. 25-lb. pail, $3.50

Send 2 cents for Dr. Hess 48-page Poultry Book **free.**

DR. HESS & CLARK, Ashland, Ohio.

Instant Louse Killer Kills Lice.

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OFFERS THE BEST IN

Barred Rocks

OUR BIRDS WON as follows: Second and 5th cock, 4th cockerel, 2d, 3d and 5th hen, 1st, 4th and 5th pullet, 1st and 2d pen, and several specials. Our birds are line-bred, and are excellent breeders as well as show birds. We have sixteen pens mated up from which you can select eggs. Eggs from regular matings $2 and $3 for 13; from special matings $7 for 13.

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H. T. McCullough, Mgr., Box A171, West White Oak Ave., Monrovia, Cal.

"HORSE SENSE"

Or in more polite language, common sense, is a valuable commodity. The fundamental principle of law is common sense; the fundamental principle of the composition of A. C. W. poultry products is common sense based on experience.

A. C. W. Beef Scrap is common sense Beef Scrap, instead of boiling all the strength out and making the product indigestible and worthless, we steam the goodness in, result high food value and easily digested product.

Same with our new Pearl Oyster Shell, common sense again, the first of its kind on the market. Order some right away.

EGG FOOD A C W IT FILLS THE BILL

All our Poultry Products are made on common sense lines. No untried or hair splitting theories go with the A. C. W.

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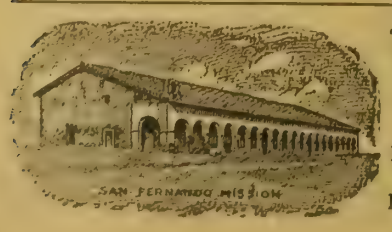
New, fresh stock, at the lowest prices.

The Improved Pacific Incubators and Combination Brooder are the best made. Come and see them.

We also make the BUSINESS INCUBATOR, capacity 100 eggs, $10 delivered. Hot water, copper boilers, nursery, Best Sheer Regulator; every thing the best. No mahogany, no frills, no furbelows. Just Business. The BUSINESS BROODER at $7 is not a box with a dangerous lamp inside, but a genuine Brooder, built for business. "The Business" does the business every time. Come and see us at our new store—central location.

Pacific Incubator Co., 707 So. Spring St., Los Angeles, Cal.



White Wyandottes

That Are Trap Nested

Prize Winning, Large Egg Laying Strain
Won 19 Prizes in 1906

Mammoth Bronze Turkeys Lakenvelders

Stock For Sale. Write for Circular

Mrs. C. D. Hubbard, Box 282, San Fernando, Cal.

from which we reproduce the following:

Directions for Use.

The directions for use are: Use pure water which has been thoroughly boiled and cooled. To each ten quarts of this water add one quart of water-glass. Pack the eggs in the jar and pour the solution over them.

The solution may be prepared, placed in the jar and fresh eggs added from time to time until the jar is filled, but care must be taken to keep fully two inches of water-glass solution to cover the eggs.

Keep the eggs in a cool place and the jar covered to prevent evaporation. A cool cellar is a good place in which to keep the eggs.

If the eggs be kept in too warm a place the silicate will be deposited and the eggs will not be properly protected. Do not wash the eggs before packing, for by so doing you will injure their keeping qualities, probably by dissolving the mucilaginous coating on the outside of the shell. For packing use only perfectly fresh eggs, for eggs that have already become stale cannot be preserved by this or any other method, and one stale egg may spoil the whole batch

"LIMBERNECK."

I have a disease amongst my chickens. They seem to get weak in the legs and in a few hours get paralyzed in the neck. They are not able to hold their heads up.—J. W. Mc.

We presume by the brief description you give, your fowls have what is known as limberneck. This should be prevented by proper feeding and treatment. You should first find the cause and remove it.

We reprint the following from the Reliable Poultry Journal, which gives the best information and remedies we have seen on the subject:

"Limberneck is a partial or temporary paralysis of the neck muscles, usually due to intestinal irritation from worm parasites, acute indigestion, colic, crop inflammation or similar troubles.

Frequently limberneck occurs where chicks or fowls have eaten large quantities of maggots or other indigestible and poisonous matter. In such cases the only treatment is to remove the cause as soon as possible. One of the most satisfactory routine methods of treating limberneck is when the case is first discovered to administer a small dose of oil of turpentine mixed with sweet oil. For little chicks, 2 to 10 drops of turpentine mixed with an equal amount of sweet oil will be found sufficient, according to age. Adult fowls may be given from one to two teaspoonfuls of oil of turpentine mixed with an equal quantity of sweet oil. Where this larger quantity is given it is usually best to administer it through a rubber tube passed directly into the crop. For little chicks the oil may be mixed with dry bread crumbs and given in the form of pills. Birds should be kept warm and quiet. Fifteen minutes to half an hour after the dose of oil of turpentine is given, give warm sweet milk to which has been added a little ginger. One teaspoonful of finely powdered pure ginger thoroughly mixed with half a cup of hot milk and barely sweetened,— of this little chicks may have from one-half to one teaspoonful every hour, and adult fowls may have from one to two tablespoonfuls.

Another good remedy for adult birds is to use a pill made as follows: Equal parts of pure lard, cayenne pepper, powdered ginger, and mustard. Rub all together until thoroughly mixed, divide into pills or slugs the size of a kidney bean. Give one of these pills at a dose and repeat in three hours if necessary. The bird will usually show signs of improvement at once, and in from 10 to 24 hours will be ready to go back to the regular food ration. At first it is best to give only a little food like thoroughly cooked boiled rice lightly seasoned with salt. Follow this with raw vegetables and a limited supply of dry grains, and pure beef scrap. Some cases where there is evidence of intestinal obstruction will be benefited by injecting one or two teaspoonfuls of castor oil mixed with an equal quantity of glycerine directly into the rectum. This may be followed with an injection of one or two ounces of luke warm water."

THE SITTING HEN.

It is true that the incubator is displacing the time-tried biddy in a great many poultry yards, yet the poultry field is very large and many thousands of hens are yet employed, especially by the farmers. We have used both methods and with quite good success, yet we like proper care of the hen and the natural method best this season as well as last will have our hatching done entirely by her again. Much depends upon her care during the winter season as to her ability as a successful hatcher. Hens from an ill-kept flock will not give good results.

If you would have early hatching done by the hen method we must care for the hens during the winter and have them produce as many winter eggs as possible. By getting them to have their laying season over they will come broody during early spring and we are enabled to get out early chicks.

There are two classes of hens that will make winter layers successfully—early-hatched pullets and one-year-old hens. It is possible to get the hens to produce winter eggs very readily, and with this done we are guaranteed early sitters.

Hens that are expected to sit and hatch successfully must not be infested with vermin and disease. Dust baths are very essential and must be supplied. We arrange boxes with our poultry house and hatching apartments filled with dry dust, ash-sifting with a sprinkling of lime and sulphur and some good, reliable insect powder. This is always supplied to the fowls while they are yet laying, thus warding off all attacks of vermin. The large gray louse that attacks the little chicks comes from the body of the hen and if she is allowed to become infested with vermin this trouble among chicks is serious, as their tiny bodies are very delicate and will not stand much sapping of vitality.—Ohio Farmer.

Keep the setting hens in some closed shed or coop away from the other fowls, where they will not be disturbed and after the chicks are hatched keep the old hen cooped until they are weaned. Never let her leave them about, and there will be more chickens at the end of the season. One will lose no chicks during a thunder storm if the hen is under a tight coop; of course, she would rather take them under the eaves of the barn if she could. Don't keep hens after they are two years old, and get new roosters every year.

Regularity in feeding will teach the fowls to be regular in their habits. If they learn that they will receive no food until a certain hour, they will not expect it, and will scratch and work until the time arrives for feeding. Habit will make them punctual, and will save time and annoyance in many ways.

WHY NOT SWAP SKIMMING FORCES?

And have an easier time.

And more dollars for the work you do.

You can come near to doubling your dairy profits—perhaps even more than double them—simply by swapping the force of gravity for centrifugal force in the skimming of your milk.

Suppose we get right down to rock bottom regarding this skimming business.

Cream and skim-milk don't separate just to accommodate anybody, but because some force compels them to.

There are just two forces known to man that can be used for the profitable skimming of milk. One is the force of gravity—the old-time crock, pan or can setting system in use ever since man learned how to milk. Let us take a look at gravity systems first and the other and stronger force afterward.

Gravity is the force that pulls every object downward—the force that gives all things weight. The force of gravity does not change. A pound is a pound the year around. When milk is set in pans, crocks or cans, the force of gravity pulls down on every particle of skim-milk or cream the crock, pan or can contains. But this force of gravity pulls harder on the skim-milk particles than on the butter-fat particles, so that we say skim-milk is heavier than cream, bulk for bulk. In

consequence of this difference in weight, or pull of gravity, the skim-milk settles down and the cream is squeezed up. But not all the cream is squeezed to the top. Some of it fails to rise. There is a reason for this.

When milk is set away in pans, crocks or cans, it begins at once to grow stale. One of the constituent parts of milk is the caseine or cheese part. The instant milk begins to grow stale, this caseine or cheese part begins to coagulate or thicken. It first forms a sort of invisible net or web all through the milk and this web grows gradually thicker and thicker until it forms the solid curd or clabber of sour milk. This web cannot easily be detected until it has become very thick, but it is there, even though we do not see it. As this web forms it entangles and holds fast many of the butter-fat globules. The force that skims the milk must be strong enough to put the entangled fat globules out of this cheesy net or a considerable portion of the butter fat will be left in the skimmed milk and be lost.

Gravity is weak. Being weak, its effect is slow. Being slow, it allows the caseine net to form. Because it is weak and slow, gravity must be allowed, say, twenty-four hours to skim a batch of milk. And all that time the milk and cream are standing round taking up odors from the air, growing stale or sour, and the fat entangling caseine web is getting in its work to your loss. The result is bad in every way. The loss of cream frequently amounts to from one-third to one-half; the other third or half is left in the skimmed milk and goes to make six-cent pork or veal instead of twenty-five to thirty-five-cent butter. The cream that is secured will be off flavor, the butter will show the effect, and stale or sour skimmed milk is not the best sort for your young stock, even though such milk be warmed before feeding. In this way gravity causes the dairyman a great falling off in quantity and quality of butter and in the value of the skimmed milk. This figures up a heavy cash loss in a year.

Is it any wonder that the dairyman who uses a gravity system fails to make dairying pay?

But how about this other and newer skimming force—this centrifugal force? How does it work? How strong is it? What does it accomplish that gravity fails to do?

Centrifugal force is the power that makes whirling bodies pull away from the center about which they are whirled. When a vessel containing milk is rapidly spun around, top like, centrifugal force is generated and pulls outward on the particles of skim-milk and cream. But centrifugal force, like the force of gravity, pulls harder on the skim-milk particles than on the cream particles, so that the skim-milk is drawn outward against the sides of the vessel and the cream is squeezed inward toward the center. Add to this spinning receptacle proper driving mechanism and proper tubes for drawing off the skimmed milk and cream into separate vessels, and you have a centrifugal cream separator—a machine that separates cream and skim-milk by the use of centrifugal force.

The most interesting and valuable characteristic of centrifugal force is this—its strength or power can be increased as greatly as necessity requires. That is the great advantage centrifugal force has over the unchangeable, weak force of gravity. Centrifugal force can be made strong enough to do perfectly and almost instantly what the force of gravity does incompletely and slowly.

This centrifulgal force, being actually ten thousand times stronger than the force of gravity, does thoroughly, and almost instantly, the skimming that gravity would do but imperfectly in twenty-four hours.

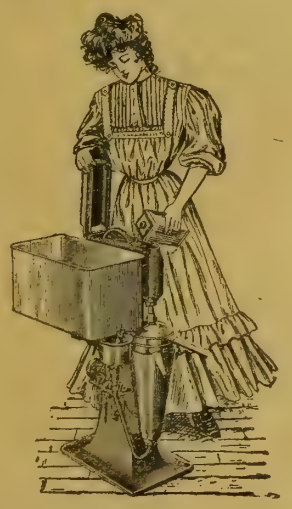
The gain in the centrifulgal force is:

(1.) A skimming force which may be made ten thousand times as strong as gravity, the amount of force depending upon the make of cream separator you select.

(2.) A gain of one-third to one-half—sometimes even more—in the quantity of butter you get from the same amount of milk under the same conditions, the amount of increase depending upon the kind of separator you select.

(3.) A gain in butter quality that will usually run from five to ten cents per pound, according to local conditions, the increase in quality depending partly upon the simplicity of the separator you select.

(4.) You will have fresh, sweet skimmed milk, still warm with the heat of the cow, which will be much better for your young stock than the stale, sour or diluted skim milk from pans, crocks, cans, or creamery.



(5.) You will have a single can of cream to set away or haul to the creamery instead of several crocks, pans or cans of whole milk to care for, and your trips to the creamery will be decreased by at least one-half.

(6.) You will require less storage room, less ice and practically no pans, crocks or cans, thereby greatly reducing the cost and labor of handling milk and cleaning milk utensils.

Do not make the mistake of thinking that the man who hauls his whole milk to a creamery and carries the skimmed milk back has solved the problem, for this man gives—wastes would be truer—his own time and the time of his team and wagon in making his daily trip. Every pound added to the load he hauls sinks his wheels so much the deeper into the mud or wrings the sweat so much the more freely from his horses. He must haul one load each way every day. In addition, the man who takes skimmed milk home from the creamery gets a stale article, diluted with washings, which may be the means of introducing into his stock tuberculosis or some other disease which afflicts some neighbor's herd.

The illustrations used in this article have been loaned to us through the courtesy of The Sharples Separator Company of West Chester, Pa., Chicago, Ill., and Toronto, Canada, manufacturers of the Sharples Tubular Cream Separator.

Should any of our readers desire more knowledge on this subject, we suggest that they write for a copy of a very useful book called "Business Dairying," which the Sharples Separator Company offer to mail, free, upon request. Be sure to mention the name of this paper when writing for this book, thus insuring the very promptest attention to your request.

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

Government Whitewash.

We wish to make a whitewash that will stick on out buildings better than milk-of-lime alone. Will you kindly give us a pointer? Also can such a wash be put on with the spray pump?—A. H. S.

The following has been given in the Cultivator several times and we understand gives satisfaction when used; it is known as Government whitewash because first recommended by the Department of Agriculture. As it is quite elaborate we first say that the addition of a strong salt solution to the ordinary lime solution makes it a fairly good outdoor wash, but of course not equal to the following:

Take half a bushel of unslaked lime slack it with water, cover during the process to keep in steam, strain the liquid through a fine sieve or tsrainer and add to it a peck of salt previously dissolved in warm water, three pounds of ground rice boiled to a thin water and stirred in while hot, half a pound of powdered Spanish whiting and one pound clean glue previously dissolved by soaking in cold water and then hanging over a slow fire in a small pot hung within a larger one filled with water. Add five gallons hot water to the mixture, stir well, and let it stand for a few days, covered from dirt. It should be applied hot. for which purpose it can be kept in a kettle or a portable furnace. Coloring matter may be added as desired. For cream color add yellow ochre; pearl or lead, add lamp or ivory black; fawn, add proportionately four lbs. of umber to one pound of Indian red and one pound common lampblack; common stone color, add proportionately four pounds raw umber to two pounds lampblack. For interior work: Slake a peck of lime till it is thick and creamy. While it is hot mix with a pint of linseed oil and one-quarter pound of glue previously dissolved in water. Let the mixture stand several hours before applying it. A little lampblack dissolved in vinegar and mixed with whitewash gives a grayish tint, which may be preferable to pure white, a little umber gives fawn color and yellow ochre a cream tint. Very little coloring matter should be used, or the shade will be too dark.

The cheapest method is, perhaps, whitewash made as follows: 30 pounds of lime, 4 pounds of tallow and 5 pounds of salt; sufficient water to make flow well. Another method is to set a shake or any object on the south or southwest side of the tree, so that the trunk is protected from the afternoon sun, wrapping with straw, old paper, or other cheap wraps is also resorted to. The best of all, perhaps, is the Yucca Tree Protector, which with its wires in place ready for instant attaching to the tree makes a perfect protection which will rest in position as long as the tree needs it. Of course ultimately so prune your tree and shape the head that the protection will be given by the tree's own leaves.

Sunburn.

Kindly let me know through the columns of the cultivator the time of the year to protect the trees against sunburn, what varieties are the most suspectible and the best method to pursue, and oblige—A Subscriber.

The time of the year when a tree is most susceptible to sunburn is hard to say, though the summer with its greater heat doubtless does the greater damage. However, if the newly set tree, or an old tree be heavily pruned, so as to let the direct rays of the sun strike the trunk, great damage and posibly death to the tree will result. Under such conditions, nearly any tree is susceptible to injury and should be protected; walnuts, prunes and peaches especially require care.

Cream Separators, all sizes, all prices. O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

Mites on Horse.

We have a mare 6 years old, which has been troubled this last two months with an itching. She rubs her hair off until it bleeds. We have applied different washes which do not seem to do much good. She looks fairly well. Would chicken lice live on a horse?—W.

This mare in all probability has chicken mites. If so, smear all over with sulphur and lard. This will kill the lice. If after leaving this on three days she is not reneved,dilute 4 ounces of Encamphol in quart of water and apply daily.—W. J. Oliver, V. S.

CLEAN UP THE CITY

Horticultural Commissioner Dingle, of the Los Angeles County Board, sends out with the following warning to fruit dealers of the City of Los Angeles: "You are hereby notified that every person having citrus fruit for sale that is infected with either Purple, Greedy or Red Scales, will have the same destroyed and is liable to arrest and punishment."

The Commission is also actively engaged in clean up work around the suburbs of the City of Los Angeles, getting after the owners of trees in yards which in the past have never had any care and are infested with Purple or Red Scale, and insisting upon the clean-up of those places. To the end that there may be no excuse on the part of the property owner, the Board of Supervisors have supplied to the Commission fumigating outfits of sixteen tents which will be used in cleaning up these city orchards.

PACIFIC COAST NURSERYMEN.

President F. W. Power of the Pacific Coast Nurserymen's Association writes us that the next meeting of the association will be held at Salem Oregon, July 10th, 11th and 12th, in connection with a Cherry Fair under the auspices of the Marion County Horticultural Society, and there will be present the Commissioners of Horticulture from Washington and Oregon and we expect also the Commissioner of Horticulture from California.

The Pomona Institute will be held under the direction of Conductor Neff on June 28 and 29, begining Friday, June 28, at 1:30.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

SERMONS BOILED DOWN.

The rightness of a thing does not depend on its wryness.

A man is not firm in faith because he is fossilized in mind.

The peroration of a sermon often prevents its application.

Most moral infection comes from apparently small vices.

Living in the past only puts the headlight on the rear platform.

A man is never happy until he has ceased to care whether he is or not.

One does not have to be crusty in nature to give a crust to the needy.

You cannot atone for stealing the bakery by giving away a few biscuits.

An honest laugh may have more religion in it than the most pious logic.

And now, fathers and mothers, a word to you. Strive earnestly to make home the best place on earth and farm life an honorable and profitable calling, so there will be little or no disposition to leave it for other occupations. Encourage the children by getting them interested in the work of the farm and home and be not afraid of allowing them to have something of their own. The children may become interested in the poultry business, that is nowhere rightly managed, becoming to be so profitable. They should have a corner in the garden and flower plats to care for and own. Get them interested in having everything about the home kept in the best of condition, something beautiful to look upon and a pleasure to own.—Hoard's Dairyman.

HOT WEATHER AHEAD.

How To Keep The Kitchen Cool And Comfortable in Mid-Summer.

Many a housewife is wondering how she will pass through the coming summer months with the stove she well knows will make the kitchen unbearably hot—to say nothing of the dirt, dust and ashes that will add to the discomfort.

There is a way out of it all—a way that not only lessens the work and keeps the kitchen cool, but that also reduces fuel expense. This convenience, comfort and economy is all effected by the New Perfection Wick Blue Flame Oil Cook-Stove, an oil stove so superior to other makes that it is fast replacing the coal and wood range, the old-fashioned oil stove, and in many cases the gas stove.

Anyone who has had to wait ten or fifteen minutes for the fire to get started will appreciate the New Perfection, which gives a strong working flame at moment of lighting. "Blue Flame" means the hottest and cleanest flame produced by any stove. The flame is always under immediate control and can be raised or lowered instantly. The convenience of this will be understood when it is considered that while the flame of one burner is boiling the kettle or roasting a large joint, that another can be reduced to simmering point—in this way enabling the housewife to cook a variety of dishes at one time.

Then the comfort of it. While the flame of the New Perfection is intensely hot, yet the heat is not thrown off into the kitchen because it is concentrated by blue-enameled chimneys.

On washing and ironing days the comfort and convenience of the New Perfection will be greatly apreciated. It gives best results in the least time, and does away with all coal and wood carrying and the many other disagreeable jobs that have to be done with other stoves. The New Perfection is made in three sizes, with one, two, and three burners, and is warranted to give full satisfaction.

Another home comfort is the Rayo Lamp, which produces a light of unusual brightness, yet soft and mellow—a light that will not hurt the eyes. It is highly ornamental and is warranted and makes a valuable and handsome addition to any home.

The New Perfection Wick Blue Flame Oil Cook-Stove and the Rayo Lamp are two real essentials to home comfort. Their easy operation, absolute safety and handsome appearance commend them wherever stoves and lamps are used.

Raise Every Chick

If every Chick hatched last season had reached maturity in 60 to 90 days—hardy, strong and vigorous—how much extra money would you NOW have in the bank? You could have SAVED these Chicks—every one—if you had used

Purina Poultry Feeds

—for one kind—Purina Chick Feed, is made on purpose to save the lives of little chicks, and make them grow like weeds. And it DOES IT. Brings up the highest percentage of every hatch EVERY TIME.

The other Purina Feeds MAKE EGGS—make your hens lay all the year 'round—make zero weather eggs EASY. They do this EVERY TIME, and with EVERY HEN, too. These may sound like "broad statements."

But don't take OUR WORD for it—try it—prove Purina Feeds yourself by feeding them to YOUR hens or chicks at OUR EXPENSE. If the RESULTS don't come, just write up the bag and write us, and we will return every penny of your money, and tell you what to do with the unused feed. You are not out a cent in making the trial, for we will supply you through your dealer or direct, FREIGHT PAID, and the feed used in testing will cost you nothing.

This is the Money Back line. Ask for particulars about our FREE TEST Plan. Write today—you can't afford to wait.

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We won as follows at the Poultry Breeders' Society Show: 1st Cock, 1st, 2nd, 3rd and 4th Hens, 2nd and 3rd Cockerels, 4th and 5th Pullets and 2 Silver Cups.

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White Minorca and White Wyandotte Stock

W. MORGAN, Sunnyside, California, has such Price $1.50 setting, $7 per 100

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Exclusively

Having added to my own flock the entire breeding pens of the Unique Poultry Farm, this gives me the best flock of Wyandottes in this part of the state. Eggs $1.50 and $2.50. Incubator eggs, $6 per hundred.

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Baldwin's White Leghorns

Egg prices cut in two for May and June. Fine youngsters at reasonable rates. Good older stock must go to make room. Send for latest price list.

Frank E. Baldwin
38 Washington Ave. - San Jose, Cal

BEST PILL ON EARTH

People who are sick with dyspepsia, headache and biliousness, having yellow complexion and pimples, do not want to experiment, but want a medicine that has had the test of time. We have cured these diseases for 25 years with DR. GUNN'S IMPROVED LIVER PILLS. They drive out the cause of sickness, making the complexion clear and healthy. 25cts. a box at druggists, or by mail. Write Dr. Boscanko Co., Philada., Pa. Sample Free.

ONLY ONE FOR A DOSE

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Four Great Occupations

The privileges and opportunities of the modern-day farmer are so ably set forth in an address made by Mr. J. P. Wise, manager of Elmwood Farm at Metuchen, N. J., before the graduating class of New Jersey College of Agriculture that the Cultivator deems it worth quoting liberally from. If for the Jerseyman the "only outlet which insures future prosperity lies along the path of knowledge, expert knowledge of the elements of farming," then for the California farmer with the peculiar conditions confronting him, great distance to market and other factors the same is doubly true. Besides, if the farmer would have the respect of other business men he must command it by becoming as educated as a class as those men are. As a matter of necessity, the respect of mankind will turn towards men who have the best developed minds. Mr. Wise says:

Four Great Occupations.

Of the four great occupations of mankind, agriculture, mining, manufacturing and commerce, the first, agriculture, was an old pursuit while the others were in their infancy. Yet today, looking at the four in any part of the earth, we see how the other three have been organized, systematized and their practice based upon fundamental laws. At the same time, it is true that the practice of farming, old as it is, has advanced but slowly, and even in this progressive country the farmers are laboriously and stubbornly true in their filial duty, farming as father used to farm.

Speak to a great majority of farmers of bacteria, the wonderful qualities of the clover family, or of green manuring and they look at you as if you were speaking in a foreign language.

All of which leads to this: The necessity of careful, intelligent farming, by trained men, with a full knowledge of what we are doing and why we are doing it. We can acquire this to some degree by careful reading of farm literature, close observation of otners successes, and best of all, from the agricultural college. Here the knowledge is given in a systematic form by highly efficient teachers.

How to Get Wise.

When we stop to consider what farming is and the knowledge underlying it, we readily see how senseless and how stupid any opposition to learned farming (if I may use the term) is. A farmer's stock of knowledge upon his subject must be what has been told him by word or books, or what he has observed.

John Jones has a banner crop of wheat or is growing an entirely new kind of plant, we hear. If we are intelligent, we will go over to see John Jones and find out all he knows about his success.

Book Farming.

Gradually, through instances of this kind, new knowledge about various things percolates, so to speak, through the community. Now the farming taught through books and the agricultural school is simply a compilation and digest of numberless farming experiences. Jones and his new crop is multiplied a million times. What father has told us has been multiplied a thousand times, proved or disproved.

What has happened in Europe and Asia is brought to our knowledge in America. What California, Colorado and Iowa are doing becomes part of our knowledge in New Jersey. The whole world is performing for us, in field and laboratory, and we have but to keep our minds open and be intelligent to profit from the successes and failures of agricultural mankind.

Must Know Many Things.

What a myriad of things the farmer should know and understand. He should be some sort of a geologist and understand the value of the soil, its formation and kinds. He should be a sort of a physicist and chemist, and so understand the beneficial action of sunshine and atmosphere and the conservation of rainfall.

He ought to know of the million of germ life working, tearing apart and making future farming possible for him, yet at the same time, he ought to know of those working against him, rendering his milk and dairy products a menace to human health.

The soil to him no longer should be a dull, inert mass, but should be something alive and energetic, anxious to break forth into harvest, and to do abundantly for the one who understands it and treats it kindly.

It is true in many cases agricultural science of today merely explains the well-known agricultural practice of yesterday, and that it does not take away the blindfolds of those who seek its mysteries and show to him a sure, shining path to success.

But the very fact of knowing that a thing should be done and why it should be done, the understanding of the law behind the practice gives a man new zest in his vocation. He becomes more able to handle emergencies. His brain is stimulated. He becomes a master of his farm.

Jerseymen Need Brains.

We farmers here in New Jersey have cause to use the full power of our brains. The West today, with naturally richer lands and less exhausted soils, competes successfully with us in our Eastern markets. It is easy to see that with decreasing freight rates, and they are sure to come, (perhaps government ownership), the competition will become stronger and fiercer and with other things being equal the battle must go to them.

To the New Jersey farmer the only outlet which insures future prosperity lies long the path of knowledge, expert knowledge of the elements of farming. Think of our incomparable markets. Knocking at our door are ten millions of people demanding fruit, vegetables, milk, cream, hay, fodders and grain. To hold, or even share, this market, we must improve our methods.

Should Try for Big Crops.

The New Jersey farmer, whether his proposition be market gardening, dairying or general farming—that is, raising the coarser crops, either for the markets or for home consumption—should push his crops to the limit. A certain maximum crop of potatoes or wheat can be raised from our land, the amount being limited chiefly by climatic conditions. Then his maximum crop should be our aim. The cost of soil preparation, the cultivation, the harvest is practically the same for a poor crop or a good crop. To insure the good crop, the use of manures and fertilizers is necessary. Therefore a complete knowledge of the kinds of fertilizers and soil and crop preferences must be acquird.

NEW ORCHARD CULTIVATOR

Every orchardist ought to know about this cultivator. A riding tool designed especially for orchard work. A favorite on the coast. Ask your dealer.

MOLINE PLOW CO., Moline, Ill.

Send 4 cents in Stamps for Flying Dutchman Song Book

Pasadena, Cal., May 22, 1906.

West Coast Stock Food Co.

Gentlemen:—I take great pleasure in recommending to gardeners your

KILLAMITE

I found it sure death to all plant insects without injury to the plants. I also use it in my poultry yards and know its use among poultry cannot be beaten.

Yours truly,
FRED ESTERWOLD,
Public Gardener and Breeder of Prize Winning Buff Rocks.

1907 LOS ANGELES 1907

We won on White Rocks, Barred Rocks, White Wyandottes, Buff Leghorns, White Crested Black Polish.

EGGS FOR SALE. SEND FOR CIRCULAR.
Golden Crest Poultry Ranch.
Box 412 Santa Ana, Cal.

Ross & Tate, Altadena, California

Breeders and Importers of
Buff, Black, and White Orpingtons

Have for sale Trios, Cockerels and Pullets. Eggs for hatching, settings or hundreds. Write or call.

Two Blocks North, One Block East Altadena Post Office

BARRED ROCKS
EXCLUSIVELY
Send for Sixteen-Page 1906 Catalogue
H. R. CAMPBELL
BOX O PETALUMA, CAL.

Spargur's Trap-Nested White Leghorns

Cockerels for sale from my best hens. A few Light Brahma Hens and Roosters for sale. Eggs from I. R. Ducks and Blue Andalusians at $1.00 per setting, $5.00 per hundred.

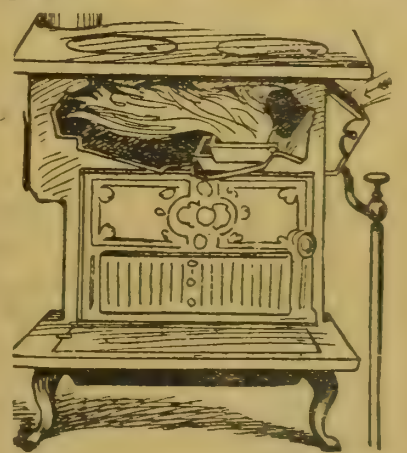
H. G. Spargur, Soquel, Cal.

WHITE WYANDOTTES Hubbard Stock heavy-laying prize-winning strain. Eggs $2 for 15; Baby Chicks 20c each. **Cannon Poultry Co. 2851 Morgan Ave., Los Angeles, Cal.** Take Slauson Ave. car to 29th St., walk 1 block west

SHADE'S RHODE ISLAND REDS
The World's best layers.
Write for Folder.
J. W. Shade San Bernardino, Cal.

WHITE, BUFF COLUMBIAN WYANDOTTES
And Golden Sebright Bantams, prize winners
Stock and Eggs in season
M. E. Dillingham, Box 67 San Gabriel, Cal

Hague Domestic Oil Burner



Showing the Method of Attaching to Cook Stove

A device for using low grade distillate Saves 40 per cent of cost of coal or city gas—let us prove it. Write for circular.

Hague Domestic Oil Burner Co.
214 Winston St. Los Angeles, Cal.

Carry it on the saddle, or any way,—but don't go without it.

APPELL'S

SOUTH AFRICAN WATER BAG

(PATENT APPLIED FOR)

Insures a refreshing drink of pure, cool water—for those who work, travel, or seek pleasure. It keeps water cool 48 hours or longer; in sun or shade; no ice; light and convenient to carry. It is a great boon to rangers, stockmen, farmers, travelers, prospectors, surveyors, sportsmen, miners, timbermen, threshing crews, millmen, railroad men, teamsters, boatmen and everyone exposed to dry, warm weather, away from good water supply. Can be carried on the shoulder, hung on vehicle, saddle or tree, or left on the ground. It will keep the water cool under all conditions, provided the bag is exposed to the air. Satisfaction guaranteed or money back.

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Manufactured by The Adam Appell Co., Portland, Oregon

Genasco Ready Roofing does what Trinidad Lake asphalt has always done.

Resists all kinds of weather and lasts indefinitely.

We are the largest producers of asphalt in the world. We know asphalt thoroughly—have studied it and used it for 25 years, and spend thousands of dollars every year in our laboratories.

The result is Genasco—the best roofing in the world.

Send for reasonable Fact-Book 35 and samples; but go also to the most progressive dealer near you and see Genasco.

THE BARBER ASPHALT PAVING COMPANY

Largest producers of asphalt in the world

PHILADELPHIA

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Do You Know You Owe

Yourself an Acetylene Gas Machine that you may have the conveniences and pleasure of the best known light and gas to cook and iron with on the hot days that are coming. We have a good machine that works right, and our best friends are our customers. We want more friends! You will be one if we serve you! Write to us just as though you had known us all your life, and we will be glad to answer or send some one to see you.

Yours for light,

20th Century Light Co.

609 E. Seventh St., Los Angeles, Cal.

JEWELRY CATALOGUE No. 10

Perfect Blue White Diamonds with Genuine Opal or Turquoise Center. No. 196, $120.00

80 pages, beautifully illustrated, instructive and interesting.

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Flawless Blue White Diamond 14K Gold Hand Carved Tiger Claw Ring. No. 197, $140.00

Household Department

MEMORIAL DAY.

THE thirtieth of May is set as a day when we as a nation pay tribute to our soldier dead. Services are held in every part of our land, and flags and flowers are placed upon the soldier's graves.

When our nation is enjoying peace and prosperity, it seems especially fitting that laurels should be bestowed upon those who rendered assistance in times of war. It is simply showing our appreciation of the bravery and self-cacrifice which helped to bring about our prosperity.

The graves of those who are buried among friends will be cared for, but hundred's of soldiers' graves are far away from friends, and are even unidentified—those should have especial attention from the hand of the nation.

The ranks of Union soldiers who follow to the cemeteries grow perceptibly less each year, and the step is not quick and elastic as it was. Would it not be appropriate for us on this day to also honor the living soldiers? They did not give their lives, but risked them, and many sacrificed health or personal prosperity. There is a beautiful little poem entitled "If I should Die Tonight" whose thought is that if the writer should die, many flowers would be brought and kind things would be said of her, but she thinks to herself how much more she would appreciate them if a few kind things were done and said while she is yet alive.

Celebrating a Merorial day develops patriotism, and strengthens the cords which bind us together as a nation. It is a regrettable fact, however, that some are not willing to celebrate a holiday which shall not be one of jollification; the day of mourning should not be used for games, sports and entertainments. It is a day which should be held at least in honor and respect.

In the beautiful month of May when the world abounds in flowers, it seems but just that each soldier's grave should be rembered with a wreath. It is, indeed, appropriate that the muffled drum should lead the step of those who place the flag and lay the flowers upon the graves of our nation's protectors.

In Remembrance

Again is heard the roll of drums,
Again the trumpets play,
In honor of the soldier dead;
And comrades come to lay
On each green mound a sign of love,
And speak again each name
That time nor change can ever blot
From the bright scroll of Fame!

And as each year its circle makes,
This day of memory comes,
And marching feet keep old-time step
To beat of rolling drums.
Around the graves where blossoms lie,
And soft young grasses creep,—
Where waves the Flag which cost so much
To gain—so much to keep!

But veterns few and fewer come
The fragrant wreaths to bring,
For one by one they join the ranks
Of those long slumbering.
But they too share the words of praise,
And share the wreath of bloom;
For in the Nation's memory
Each one finds welcome room!

A few years ago the United States Department of Agriculture started a plantation of osiers on its experimental farm at Arlington. It has been thriving, and recently a quantity of the willow wands, ready peeled and prepared, was sent to a manufacturer of willowware, who converted them into chairs, settees and other articles, that a blind basketmaker declared were better than those from the imported article.

"She let fall a few remarks——"

"Is that why she spoke in such broken tones?"—Baltimore American

BLOSSOMS FOR THE BRAVE.

We think of you as brave and true,
Grand Army of the Dead;
You lie 'neath sod and dew,
Grand Army of the Dead.
Thou who didst the nation save,
Here we come to deck thy grave,
Scattering blossoms on the brave
Grand Army of the Dead.

No more ye hear the cannon boom,
Grand Army of the Dead;
Your flag is floating o'er your tomb,
Grand Army of the Dead.
Here we come with flowers today,
Here our orisons we say;
Sleep ye here till Judgement Day,
Grand Army of the Dead.

Your bivouac is grassy knoll,
Grand Army of the Dead;
Eternal rest, your long parole,
Grand Army of the Dead.
Death-white lips, the blood-red hue,
Staining every blouse of blue,
Show the nation's debt to you,
Grand Army of the Dead.

Comrades, uncover! Make salute!
Grand Army of the Dead;
Sweet messenger, these flowers mute,
Grand Army of the Dead.
Precious blood, when valor dies;
Hallowed spot where patriot lies;
Gateway up to paradise;
Grand Army of the Dead.

FAMILY ANNIVERSARIES.

"Thanksgiving and Christmas, wedding days and birthdays, are occasions that should never be neglected in the life of the family," writes Margaret E. Sangster in Woman's Home Companion for June. "Even though the married children go far from the early home, living in widely separated neighborhoods, they should make an effort to get together at stated intervals, and so long as their parents live, the old home, with its dear memories, should draw them like a magnet to its hearth. Little cousins ought to know one another and be acquainted as brothers and sisters are. When long trips across the continent involve too great an expense or frequent visits, there is always the letter box on the street corner or the rural free delivery, and the post may be trusted to carry love messages safely from Maine to California, or around the circuit of the globe. How the mother at home watches for tidings from her married children, and how she grieves when for weeks and months she never receives a word and feels that she has dropped out of the daily lives of those for whom she toiled and saved years ago.

"Do you owe your mother a letter or a visit or a gift, you who are far away from her now? Do not let the sun go down until you pay that debt of love.

"Do not forget that although we may have many friends, we can have but one mother, and that no friend can be quite so intimate as she."

"Schwartz's Pattery Vas Took."

During the battle of Shiloh an officer hurriedly rode up to an aid and inquired for Grant. "That's the man, with the field glass," said the aid.

Wheeling his horse about the stranger rode furiously at the general and, touching his cap, addressed him thus:

"Sheneral, I vants to make one rebort—Schwartz's pattery is took."

"Ah!" said the general. "How was that?"

"Vell, you see, sheneral, der shecessionists flanked us, und der shecessionists come in der rear of us, und den Schwartz's pattery vas took."

"You, of course, spiked the guns."

"Vot!" exclaimed the Dutchman in astonishment. "Schpike dem guns! Schpike dem pran new guns? V'y, it would shpoil dem!"

"Well," said the general sharply, "what did you do?"

"Do? Py chimmeny, ve took dem pack again!"

SOME RECIPES.

Banana Pie.

Free enough bananas from skin and coarse threads to fill a cup when the pulp is pressed through a sieve or ricer. To the pulp add a beaten egg, one-half cupful of sugar, one cracker powdered fine, one-half teaspoonful of salt, one-third of a teaspoonful of cinnamon, two tablespoonfuls of molasses, one-third of a cupful of cream and one-half cupful of milk, mix thoroughly, and bake until firm in a pie-pan lined with pastry as for squash pie.—Woman's Home Companion.

Cherry Shortcake.

Make a soft dough of four cupfuls of sifted flour, two teaspoonfuls of baking-powder, one teaspoonful of salt and four teaspoonfuls of butter. Mix with milk. Cook in two layers, buttered. When brown, remove from the oven, butter again, spread the bottom layer with cherries that have been stoned and sweetened, put on the top crust, and cover with fruit. Serve with whipped cream.

Strawberry Shortcake.

Two cupfuls of flour, two teaspoonfuls of baking-powder, two tablespoonfuls of butter and a pinch of salt. Mix with milk, roll out in two layers, butter and bake. Spread with the berries, sprinkle with sugar, place the top layer on, butter, and cover with berries. Over this spread a layer of meringue made of the beaten whites of two eggs and three tablespoonfuls of sugar. Brown quickly, without cooking the fruit. Serve with whipped cream.—Woman's Home Companion.

HOMELY HINTS.

Pieces of rubber tubing slipped over the kitchen sink spigot will keep many a fine dish from being nicked.

If the bottom of the pan in which milk is being heated has been greased first with butter the milk will not burn.

Two ounces of boric acid crystals to a quart of water makes an excellent solution for burns. It is also a good antiseptic solution.

Milk taken hot or cold is fattening, but it should always be sipped, never swallowed hurriedly. To induce sleep, sip a cupful of hot milk before retiring.

To make paper and cloth fire proof, dip into a solution of alum, then throw over a line to dry. Test in the flame of a candle, and if a tendency to burn is shown, repeat the alum bath.

Apple, potato and most other stains can be removed from the hands by rubbing them with oatmeal mixed with lemon juice or vinegar. When the stain is quite removed wash with warm water and soap.

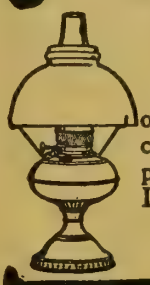
A Summer Vacation in Your Kitchen

Don't swelter this summer with the temperature at 110. Get a New Perfection Wick Blue Flame Oil Stove and have a cool kitchen. The

NEW PERFECTION

Wick Blue Flame Oil Cook-Stove

produces a working flame instantly. Blue flame means highly concentrated heat, no soot, no dirt. Oil is always at a maintained level, ensuring a uniform flame. Made in three sizes. Every stove warranted. If not at your dealer's write to our nearest agency for descriptive circular.



The **RayoLamp** is the best lamp for all-round household use. Made of brass throughout and beautifully nickeled. Perfectly constructed; absolutely safe; unexcelled in light-giving power; an ornament to any room. Every lamp warranted. If not at your dealer's write to our nearest agency.

STANDARD OIL COMPANY,
INCORPORATED

Eastern SALT LAKE ROUTE Excursions

From All Salt Lake Route Stations in California

Chicago - - $72.50	**Atlantic City, N. J. - - - $91.75**
St. Louis - - 67.50	For American Medical Association Convention.
St. Paul - - 70.00	On sale May 25-26-27.
Omaha - - 60.00	—
Kansas City - - 60.00	**Norfolk, Va. - $97.75**
New York - - 108.50	For Jamestown Exposition. On sale May 25-26-27, June 6-7-8, July 9-10-31 and later.
Boston - - 109.50	
Philadelphia - 107.50	
and many others.	
On sale, May 20-21, June 6-7-8, July 3-4-5 and later.	

Return limit of all tickets 90 days after date of sale, except that those sold on June 6-7-8 will be limited to October 15th.

GOOD ON LOS ANGELES LIMITED

Full Particulars at All SALT LAKE ROUTE Ticket Offices

$3.50 WILL BRING YOU THIS

Hopkins & Allen "WILD WEST" REVOLVER

POST-PAID BY MAIL

32 or 38 Calibre

A REVOLVER EVERY FARMER SHOULD OWN

6 Inch Blued Steel Barrel

Write for our Big New "Gun Guide and Galalogue" for 1907. It's free and the best and most interesting Firearm Catalogue published in America. Offers best prices.

HERE'S A REVOLVER THAT OUGHT TO BE IN THE POSSESSION OF EVERY FARMER IN THE COUNTRY. It is especially designed for the farmers use—long range shooting and extra thorough protection. With it you can get at the night prowler in barnyard or chicken lot without coming to close quarters with him, and the blued barrels keep the sights clear in the moonlight giving you double protection against the foe.

DESCRIPTION: This revolver is specially constructed for farmers use, of high-grade material throughout, **and is warranted to give extra good satisfaction. Barrel and cylinder** are made of best blued revolver steel, drop forged, with our popular improved quick twist rifling, which **increases velocity and improves trajectory. Cylinder** is supplied with ratchet stop and counter-sunk pinion giving rapidity of action and extraordinary accuracy. **Frame** is made of Blued Steel and all lock work of high-grade spring steel. **Hammer and Trigger** are made of fine drop forged steel, **case hardened**; hammer rebounds after firing—never resting on cartridge except at the instant of discharge. Revolver is **Double Action,** self-cocking with hard, checkered rubber handle, pistol shape, which fills the hand and gives an excellent grip. 32 Calibre, 6 shots, 38 Calibre, 5 shots. ALL IN ALL THIS REVOLVER IS EXTRA HIGH-GRADE FOR THE PRICE, AND FOR FARMERS USE IS SUPERIOR TO MANY OTHER REVOLVERS COSTING TWICE THE MONEY.

IF YOU SHOULD NOT FIND THE "WILD WEST" REVOLVER AT NEAREST HARDWARE STORE SEND $3.50 DIRECT TO US, AND WE WILL FORWARD IT AT ONCE, POST-PAID BY MAIL WITH AN ABSOLUTE GUARANTEE OF SATISFACTION, OR IMMEDIATE REFUND OF MONEY. Same Revolver, 4½ in. barrel, $3.25, 2½ in. barrel, $3.00. Mention Calibre wanted when ordering.—Write us at once.

THE HOPKINS & ALLEN ARMS CO. 121 FRANKLIN ST., NORWICH, CONN., U. S. A.

Largest Manufacturers of High Grade Popular Priced Firearms in the world. European Office: 6 City Road, Finbury Sq., London. Makers Celebrated H. & A. "Scheutzen" and "Junior" Rifles, "Military" Repeating Rifle, etc.

LINERS

Liner Advertising
Advertisements in Liner Column 1¼ cents per word. Eight words to a line. No advertisement taken for less than 25 cents.

EGGS FOR HATCHING.

AT REDUCED PRICES BALANCE OF season from my prize winning Barred Rocks; won all special and 13 regular prizes on Barred Rocks at late Los Angeles show. Eggs from best pens, $2.50 per 15; $10 per 100. Can furnish any quantity. Also offer extra bargains in breeding stock. CHAS. E. SMITH, Gardena, Cal. San Pedro Interurban car to Smith's Crossing.

McKINLEY POULTRY FARM—BREEDERS of Bluff and White Wyandottes. Member American Buff Wyandotte Club. Golden Seabright and Pyle Game Bantams. Eggs $3.00 and $2.00 per 13. Take San Pedro Interurban car to McKinley, first house north. BOX 11, R. F. D., Gardena, Cal.

BLUE RIDGE POULTRY YARDS, W. H. Brown, Prop., 128 Ave. 32, Los Angeles, Cal. Breeder of Blue Andalusians. Won more first prizes than all our competitors combined. All specials went to our strain. Eggs $1.50 and $2.00.

WHITE LEGHORN AND WHITE WYANdotte eggs for hatching, from extra choice, trap-nested, bred-for-eggs stock. Leghorn eggs $5.00 per 100; White Wyandotte eggs $1.00 and $1.50 per setting, $6.00 per 100. F. T. McLAUGHLIN, Gardena, Cal.

S. C. WHITE LEGHORN EGGS FROM THE bred-to-lay Blanchard strain. Large birds. $1.00 for 15; $6.00 per 100; Free city delivery. C. M. GIBBS, R. F. D. No. 4, Los Angeles, Cal. Phone W. 591

PARTRIDGE WYANDOTTES—C. ANDREWS 332 West Third street, yards at Hollywood, Cal., eleven prizes and silver cup at Poultry Breeders' Show 1907.

POULTRY.

BARRED PLYMOUTH ROCKS, OCEAN Blue Strain. All our breeders for sale without reserve. Eggs, one-half price. Now is the time to buy your breeders for next year. We have lots of good ones. Write today. We live at Moneta, Cal. Take Redondo car, 2nd and Spring Sts., via Gardena. Get off at Illinois St. right on ranch. MR. and MRS. D. T. WIELAND.

HOMER PIGEONS FOR SALE—ABOUT 50 pairs of the celebrated fine blood Plymouth Rock strain at $1.50 per pair if whole lot is taken; in 10 pair lots, $1.75. Also 2 pairs "Racers" at $5.00 per pair. F. G. FOLSOM, Auburn, California.

SINGLE-COMB WHITE LEGHORNS, FINE white, large, birds; good layers. Hatching and shipping chicks. Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER, Ontario, Cal.

MACHINERY.

CHEAP FOR CASH—ONE 35-H. P. FAIRbanks and one 10-H. P. Gas Engines in good condition, and can be seen in operation at our plant. ALEXSON MACHINE CO., 1406 San Fernando St., Los Angeles.

FOR SALE—COMPLETE PUMP PLANT, three-horse gas engine, capacity twenty-three hundred gallons per hour. Good order, reliable, cheap. JOSEPH THORNDYKE, Pasadena, Cal. R. F. D. No. 1.

DUCKS.

INDIAN RUNNER DUCKS—A WORLD beater for producing Eggs. Pure strain. $1.00 for 13; $5.00 for 100. Black Langshans, Prize Pen. $2.00 for 13. F. M. BENDER, Corona, California.

BABY CHICKS FOR SALE.

BABY CHICKS—ALL VARIETIES OF Standard Breeds by dozens, hundreds or thousands. Leghorns, $10 per 100. DOKE STOCK FOOD CO., 711 S. Main, Los Angeles

TREES.

FOR SALE—4000 VALENCIA AND 1000 W. Navels; one year buds on three year roots, clean and vigorous; buds taken from bearing trees. F. E. CHAPMAN, R. F. D. Box 34, So. Craig Ave., Pasadena, Cal.

FARM LAND.

RICHEST PRAIRIE LAND IN NORTH America. Yielding greatest average crops known of wheat, oats, barley, sugar beets. $12 to $25 per acre. Easy terms. Water sure. Free fare on certain conditions. Address, W. R. GILSON, 333 Hellman Building, Fourth and Main, Los Angeles.

FOR SALE—RANCH OF 240 ACRES 100 UNder cultivation, twelve in vineyard, balance in grass and timber. Fine springs; a bargain. Address P. O. BOX 26, Lower Lake, Lake County, California.

AGRICULTURAL IMPLEMENTS.

A COMPLETE THRESHING OUTFIT, one 44-inch Laughlinberg Separator and 30-horse power engine, tools, and rope ready for work. Thoroughly overhauled. R. C. ANDREWS, Clearwater, Cal.

RANCHES FOR SALE.

FOR SALE—ON EASY TERMS. A FARM of 100 acres; good river bottom land. Located 3 miles north of Anderson, Shasta Co., Cal. For particulars, address, ADAM FICKAS, owner, Anderson, Shasta Co., Cal.

COFFEE.

SAVE ONE-HALF BY BUYING DIRECT. Ten lbs. Aroma Coffee $2.30 or 10 lbs. Fancy Ceylon or Japan tea $3.00. Freight prepaid. Money refunded if not satisfactory. Send P. O. order or check. F. W. SPARR, 114 E. Market St., Los Angeles, Cal.

MISCELLANEOUS.

EXPERIENCED PRUNER—HAVING HAD years of experience in pruning orange and lemon trees. I offer my services for such work. Address, C. D., care Cultivator office.

WANTED—CASING AND ONE THOUSAND feet of pipe to irrigate alfalfa. A. Z. TAFT, Hollywood, Cal.

WANTED—SOME APPLIANCE FOR MOVing full-grown lemon trees. A. Z. TAFT, Hollywood, Cal.

The Produce Markets

Los Angeles Markets

LOS ANGELES, May 29, 1907.—Most products are holding firm at but slightly changed quotations from last week. There is a slight holding off on the part of some dealers until the first of the month which makes the demand not so heavy as a week ago

Butter.

Receipts of butter yesterday were heavy. The high prices which went into effect at the close of last week attracted the heavier supply, most of which came by boat from the north. Notwithstanding this increase dealers report they are cleaning up their allotments without difficulty and at times are even drawing a little Eastern from storage.

Valley Creamery	52½
Coast fy	50
Cooking	20

Cheese.

Cal. Young American, per lb	19
California Anchor	18
Cal 3-lb. hand	20
Northern fresh	15
Domestic Swiss	18½
Imported Swiss	32

Eggs and Poultry.

Eggs took a slight slump during the week going as low as 18c but later recovering and now standing at practically the same as last week.

Eggs, local, candled	21¼@21½
Eggs, case count	19¼
Eggs northern	17

The following are average prices which dealers pay to producers for live weight:

Hens, per lb	13
Young Roosters, per lb	17
Fryers	20
Broilers, per lb	26
Old Roosters	7
Turkeys	17
Geese	12
Ducks	13
Squabs per doz	1.50@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles. on all stock.

Hogs, 200 lbs	7.50@8.00
Prime Steers	4¾
Heifers	4¼
Calves per lb.	5
Sheep, ewes, per head	5.00@5.25
Lambs per head	4@4.25
Wethers	5.50

Potatoes.

Colorado	1.80@1.90
Minnesota	1.75@2.00
Oregon,	1,80
New	2.00

ONIONS.

Silver skins per box	75
Nevadas	2.50@2.60
Texas	1,75
Imperial per crate	2.00
Imperial per sack	3.00

Vegetables.

There were plenty of fresh green vegetables in the market, but demand in keeping with the weather was very slow.

Asparagus, lb	11@15
Beets per doz	30@40
Bell Peppers green lb	20
Cabbage sack	1.00@1.15
Chili Peppers Green	30
Cucumbers per doz	75@1.00
Carrots per doz	30@40
Green Onions, doz bunches	10@30
Lettuce, per crate	75
Radishes per doz	15@20
String Beans, per lb	7@8
Sugar peas, per lb	3½
Summer Squash crate	80@1.00
Tomatoes, Mexican crate	2.20@2.25
Turnips, doz bunches	10@25
Peas sugar per lb	3@4
Artichokes	75
Water Cress per 100	40@50
Spinach, per doz	10@15
Corn per doz	35@40
Cauliflower,	75@1.00
Beans 1 wax	4@5
Beans green	3@4

Citrus Fruits.

Lemons	2.00@3.50
Valencias	1.50@2.75
Navels	1.25@2.00
Grapefruit Seedless	3.00@3.25
Grapefruit Seedlings	1.25@1.35

Fresh Fruits.

Trading in fruits was also a little quiet on account of the dull weather and both cherries and apricots are quoted a trifle lower.

Apples, Ben Davis	1.50
Pearmains	2.25
Blackberries	4@5
Cherries loose	9@11
Cherries white per drawer	75@1.00
Cherries black	75@1.00
Figs black per lb	17@20
Gooseberries	13
Logans	5@6
Loquats	5@10
Raspberries	8@9
Strawberries	3½@5
Apricots per lb	08@10

Dried Fruits.

Evap. Apples, fancy, per lb	9½
Apricots	7@17½
Peaches	12½
Pears	12@13
Prunes, fy	5@8

Raisins—Four-Crown cluster, per box, $2.75; loose, 50-lb. box, 9c per lb.; 3-Crown London layers, per box, $1.95; loose 50-lb. box, 8½c per lb.; do, 2-crown, per box, $1.75; do, loose, 10-lb. box, 8c per lb.; seedless, fancy bleached, per lb., 12½c; Sultanas, unbleached per lb., 8½c.

Beans, Dried

Limas per ctl	4.75@5.00
Pink No. 1	3.00
Lady Washington	3.00
Small White	3.55
Black Eyes	5.50@6.00
Garvanzas	5.50@6.00
Lentils	12@15

Honey

Honey is beginning to cause some interest and prediction is made for fully as good prices as prevailed last year. Water white extracted is now commanding 6c f. o. b. Los Angeles with comb holding at 10 to 14 according to quality.

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb cans	7
Light Amber	6½
Comb, water white, 1-lb. fms	12@15
Light Amber	10@12

Nuts.

Almonds per lb	19@25
Peanuts, Virginia	9
Peanuts California	6@7
Walnuts, No. 1 S. S.	14@15

Hay.

Barley, No. 1	14.50@17
Alfalfa, Local, per ton	14.00@16.00
Plain Oat Hay, No. 1	12.00@14.00
Plain Oat Hay No. 1	18.00@20.00
Wheat No. 1	14.50@16.00

Grain.

All grains even marked up this morning as indicated in the following:

Purchasing prices f. o. b., Los Angeles are:

Wheat, new, per cwt	1.70@1.75
Barley	1.17½@1.22½
Corn, per cwt	1.50
Cracked Corn	1.45
Feed Corn Meal	1.50
Shorts	1.35
Bran	1.20
Oil Cake Meal	2.50
Cocoanut Meal	1.40

Feed Stuff.

Selling price F. O. B. Los Angeles as follows:

Cracked Corn	1.55
Shorts	1.45
Bran	1.30
Egyptian Corn,	1.50
Rolled Barley	1.40
Feed Meal	1.60

San Francisco Markets

SAN FRANCISCO, May 28, 1907.

Butter.

The dairy market is firm with a good demand. Receipts are steadily coming in, so the supplies on hand are quite sufficient to meet all needs. Butter is mostly in request for the lower grades, but the best class also meets with a quite satisfactory inquiry.

California, ex per lb	22
California, firsts	21½
California, seconds	21
Packing Stock	20

Cheese.

Cheese market is firm and of good volume with indications for improvement.

Cal. Young American, fancy	14½
Cal. Flats, fancy	11½
Cal Flats fancy	
Eastern, fancy	

Eggs and Poultry.

Eggs remain as quoted last with a firmer tone prevailing.

Fresh Ranch Eggs	
Eggs, first, per doz	
Eggs, seconds, per doz	
Eggs thirds	

The poultry market is as goo could be expected. There are p ceipts worthy of note and th business drags, some of the left over from the last week so somewhat lower than the quotec ures. A much improved trade ove preceding week is expected durin coming few days, especially in young stock, while older grades a sparse supply. The quantities on a are yet much in excess of rec ments, but the surplus stock s signs of being diminished.

Hens per doz	4.50
Hens large	5.50
Young Roosters, large	7.00
Young Roosters, small	4.50
Old roosters	4.50
Fryers, per doz	6.00
Broilers per doz	4.00
Ducks, young	6.50
Geese, per pair,	2.00
Turkeys, per lb	
Pigeons	1.25

Live Stock.

Steers No 1	
No. 1 Cows and Heifers	7
Hogs 80 to 130 lbs	
Hogs 250 to 350 lbs	
Calves per lb	
Lambs yearlings	6

Potatoes

Salinas Burbanks ctl	2.50
Oregon Burbanks	2.50
Rivers	1.00
New potatoes	

Vegetables.

Asparagus	
Cucumbers per box	1.25
Chili peppers green lb	12
Green peas per lb	2
Squash crates	75
Onions yellow per crate	2.00
Onions new per box	
Peppers Green Bell	
Rhubarb, per box	1.25
Tomatoes Mexican	2.00
String beans	

ONIONS.

Onions new box	7
Onions yellow ctl	2.00
Onions white ctl	1.75
Onions new Reds	1.75

Citrus Fruits.

Lemons	1.00
Navels	1.50
Seedlings	1.25
Grapefruit, seedless	1.75
Limes	4.50

Fresh Fruits.

Apples, per box	1.50
Strawberries, crate	1.00
Apricots, crate	2.00
Cherries, blk	
Cherries, white per bx	5
Cherries, per lb	
Blackberries, per crate	2.50
Logans, per chest	8.00
Strawberries, per chest	8.00

Dried Fruits.

Apples (evap.)	6
Apricots, per lb	1
Figs, white	
Prunes, four sizes	3
Peaches	1
Raisins, seeded (1906)	3
Thompson, unbleached	
Thompson, bleached	
Pears	7½

Beans, Dried

Limas No. 1	4.40
Pink	2.30
Large White	2.40
Black Eyes	4.90
Red Kidneys	3.50
Bayo,	2.85

Hops.

Fancy, 11c; choice, 8@10c; prime 8c; common, 5@6 per lb.

Nuts.

Almonds, new	17½
Peanuts, California	6½
Walnuts	1

Honey

Clear White Comb	16@
Amber	1
Extracted	
Beeswax, per lb	2

Hay.

Alfalfa, local	11@
Oat	1
Wheat, No. 1	2
Wheat, No. 2	1

Grain.

The wheat market in this city m tains the same steady position w has ruled now for some time. Ci

spot wheat is decidedly scarce and the milling interests are constantly on the alert for offerings of suitable grade for which they gladly pay full figures. There is an abundance of poor Wheat offering, but the demand is quite moderate.

Wheat, No. 1 ..... 1.42½@1.52½
Barley, No. 1 ..... 1.22½@1.25
Corn, small yellow.. ..... 1.55@1.60
Corn, yellow..... ..... 1.45@1.50
Oats, White.... .....1.55@1.75
Oats, Red.... ....1.60@1.75
Bran, per ton ..... 20@21.50
Straw, per bale ..... .50@.70
Feed Corn Meal, per ton .. 32.50@33.50
Cracked Corn, per ton ..... 33@34
Oil Cake Meal, per ton....40.00@41.50
Cocoanut cake, per ton 27.00

Citrus Market

LOS ANGELES, May 29, 1907.

The closing of the navel season finds the orange growers wearing the "smile that won't come off," and while the past three or four weeks haven't hit quite the high points of the earlier season, there is nothing in it discouraging.

At this writing, the consumption is heavy and a good tone prevails, in fact, the market may be said to be strong. There are many "large offs" which cause a little embarrassment in hunting a market which will absorb them at a winning price; but thus far, fair results are obtained even with them.

Orchardists have not complained of puffs or drops, or at least those evils are reduced to a minimum. In that respect this is nearly a model season.

Soon Finished.

Navels will soon be finished. Valencias are going out up to this time under special orders only. Seedlings and Sweets command fair attention.

As to the future, information from all over the country leads to the belief that there will be a good market for all late fruits. It is a fact that the East has produced no early fruit of any kind. The strawberry crop is practically a failure everywhere and the very uncertain weather in the East, hot a few days and then cold, has virtually ruined the crop. The eastern cherry crop is also a failure and the only fruit they will have in any amount is California oranges. Pineapples are high, exceedingly high and scarce. Bananas are also high, but this fruit is in a class by itself and effects oranges only in a small degree.

Lemons.

Lemons bravely hold up under the most adverse conditions. The early hot weather of the East when California could get no cars to forward its fruit caused the great influx of "foreigns," much to their sorrow, for the later cold weather put prices out of joint, so great quantities are on the New York docks at this writing. However, Californias have the pull with the consumer who knows their superior qualities and often refuses the "just as good as" foreigns, so that Californias have at times commanded a dollar advance over the Mediterranean fruit.

Grape Fruit.

Grape Fruit is now receiving fair treatment and the small quantity now in hand will clean up at fair prices.

Shipments.

Shipments to date aggregate 20,698 cars, of which 1966 were lemons. To same date last season 20,891, of which 2311 were lemons.

NEW YORK, May 27.—The market is very strong and higher on bulk offerings. The very ordinary quality in bad order. Raining. Thirty-four carloads oranges sold.

NAVELS—
Anemone Thomp's imp C C U....$2.75
Cerrito Thomp's imp High Dist... 4.65
Bavilan o r F H Speich & Co..... 2.70
Golden Rule Tho's imp Riv Ft Ex 3.00
Golden Rule x c Riv Ft Ex..... 3.20
Setter, x c A H Ft Ex..... 2.65
Red Globe x c Riv Ft Ex..... 3.20
Quail x c O K Ft Ex..... 2.60
Golden Rule x c Riv Ft Ex..... 2.40
Royal Knight x f R H Ft Ex..... 2.65
Ben Hur x c R H Ft Ex..... 2.55
Red Globe x c Riv Ft Ex.....3.20
Quail x c O K Ft Ex..... 2.25
Pet x c S A Ft Ex 2.65
Grayhound ch S A Ft Ex..... 2.45
Riverside st Riv Ft Ex..... 2.50
Airship ... VC Ft Ex..... 2.35
Rose x f Redlands O G Assn.... 3.85
VALENCIAS—
Signal x f Stewart Ft Co..... 3.85
Solano o r Stewart Ft Co..... 2.45
S S st Stewart Ft Co..... 2.55
Quail x c O K Ft Ex..... 3.30
Not Named o r Shepherd..... 3.30
SEEDLINGS—
Conqueror ... Independent Ft Co.. 2.30
Native o r Sutherland Ft Co..... 2.95
A1 o r Ed Peycke..... 2.05
Deal o r Ed Peycke..... 1.65
Golden Rule x c Riv Ft Ex..... 3.00
ST MICHAELS—
Signal, x f Stewart Ft Co..... 3.85
Solano o r Stewart Ft Co..... 3.45
S S st Stewart Ft Co..... 2.90
Victory x c C C U..... 2.95
Native o r Sutherland Ft Co.... 3.05
Red Globe x c Riv Ft Ex..... 2.90
Old Mission ch Chap'n's Full'rt'n 4.00
Golden Eagle st Chap'n's Full'rt'n 3.40
Victory x c C C U..... 2.60
Grayhound, ch S A Ft Ex..... 3.10
Red Globe x c Riv Ft Ex..... 2.55
Ruby, fy C C U..... 2.25
SWEETS—
Anemone st C C U..... 2.30
Flamingo, x c C C U..... 2.05
Vacation 2.10
Golden Rule x c Riv Ft Ex..... 3.15

Boston, May 27.—The market is strong and higher. It is raining. Twenty carloads sold.

NAVELS—
Crafton x f Crafton O G Assn.... 3.30
Yosemite fy C C U..... 2.85
Partridge x c C C U..... 2.15
Lilac ch C C U..... 1.80
W Highlands, Highland Dist..... 1.70
Priscilla fy S B Ex Highland.... 3.35
John Alden ch S B Ex Highland.. 3.30
Carrier st S B Ex Highland.....3.15
Homer ... Q C Ft Ex..... 2.65
Quail x c O K Ft Ex..... 2.55
Rose x f Redlands O G Assn..... 3.10
ST. MICHAELS—
Rialto 2.30
SEEDLINGS—
Parrot 2.70
SWEETS—
I X L..... 3.10
W. Highlands 2.05
BLOODS—
Camel 2.55
Quail (halves) 1.40
LEMONS—
Rossmoyne fy 3.80
Rossmoyne ch 3.45
GRAPEFRUIT—
Red Beauties 3.45

Pittsburg, May 27.—The market is steady and the weather is favorable. Fourteen carloads of navels and one of lemons sold.

NAVELS—
Red Globe x c Riv Ex Riverside..$2.85
California Orange, st Riv Ex Riv.. 2.60
Grayhound, ch S. A. Ex San Dimas 2.80
Coyote ch O K Ft Ex..... 2.10
Blue Jay, st O. K. Ft Ex..... 2.20
Lark ch O K Ft Ex..... 2.40
Owl st O K Ft Ex..... 2.05
SWEETS—
Old Oak 2.90
Canoe 2.50
Old Oak 2.60
Canoe 2.45
Mtn Lion 2.45
Stock Label 2.40
SEEDLINGS—
Criterion 2.55
Conqueror 2.40
LEMONS—
Ramona 2.45

ST. LOUIS, May 27.—The market is firm on good stock. The weather is cold. Eleven carloads sold.

NAVELS—
Gavalon fy Speich & Co.....$2.85
Pride of Cal st Speich & Co..... 2.65
Our Popular x c Speich & Co..... 1.60
Golden Gate x c Redlands G O As 2.80
Uncle Sam x f Riv Ex Pachappa 2.90
Fiesta xc Riv Ex Pachappa..... 2.60
SWEETS—
Lone Palm E E 2.50
Tourist..... .... 2.25
SEEDLINGS—
Native..... .... 1.70
LEMONS—
Punch..... .... 4.65
Club..... .... 4.30
BUDDED—
Riverside..... .... 1.30
Standard..... .... 1.95

CLEVELAND, May 27.—The market is firm on good stock, but prices low on account of quality of fruit offered. Raining and cold. Eight carloads sold.

NAVELS—
Palm Tree ch A H Ex Prenda....$2.95
Cosmos fy S B Ex Yerkes..... 2.70
C. S. O. st S B Ex Yerkes..... 2.10
Newsboy st R H Ex Redlands... 2.10
California Orange st Riv Ex Riv.. 2.65
LEMONS—
Corona Beauty..... .... 3.45
Grove..... .... 2.15

PHILADELPHIA, May 27.—The market is very strong. It is raining. Sixteen carloads of oranges sold.

NAVELS—
Native Son st King Ft Co.....$2.65
B. Keystone ch King Ft Co..... 2.50
Salt Lake st King Ft Co..... 2.35
R. Keystone st King Ft Co..... 2.25
Lighthouse st Cal C U..... 2.30
Lighthouse st Cal C U..... 2.25
Triumph Cal C U..... 2.10
Rancho st S B Ex Colton..... 2.95
ST. MICHAELS—
Independent..... .... 3.65
Pansy..... .... 3.60
BLOODS—
Native Son..... .... 3.25
Salt Lake..... .... 2.75
Triumph.... .... 2.50
TANGERINES—
Poinsetta..... .... 1.30
Floral..... .... 1.40

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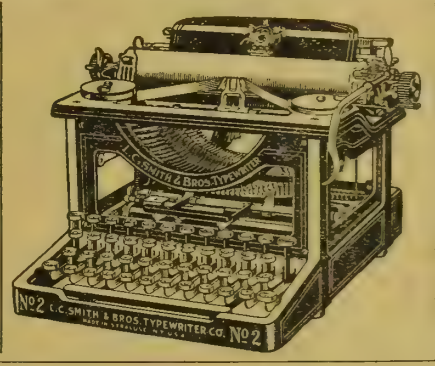

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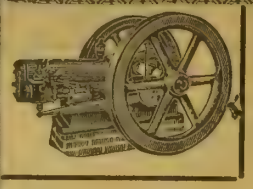
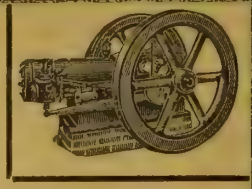

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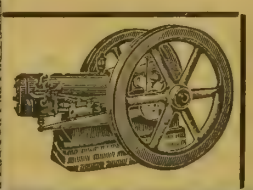
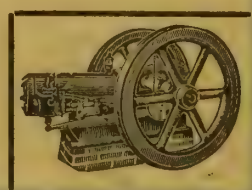

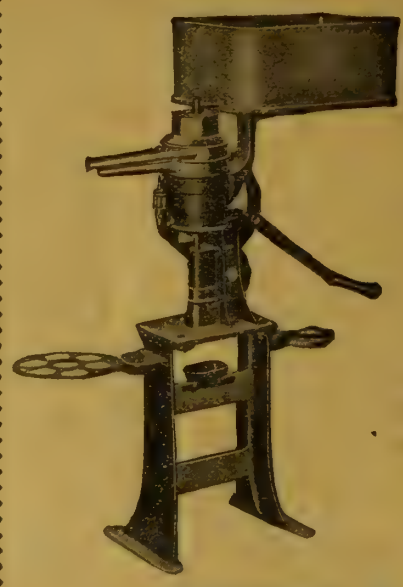

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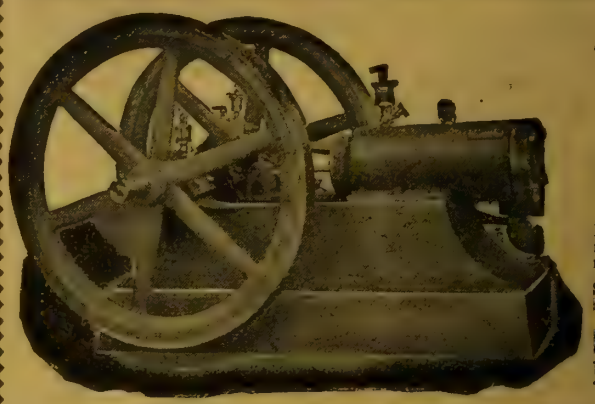

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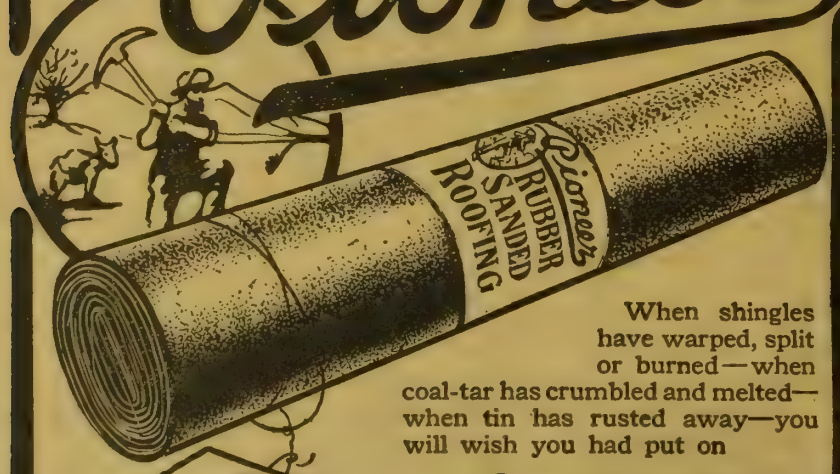

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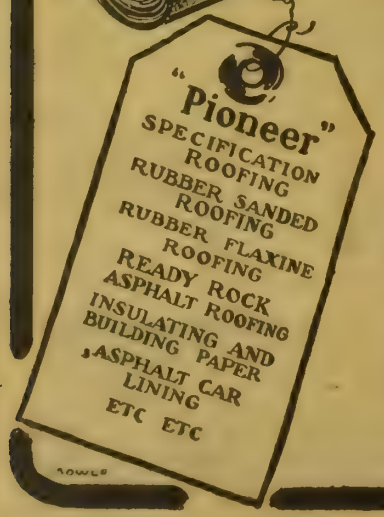

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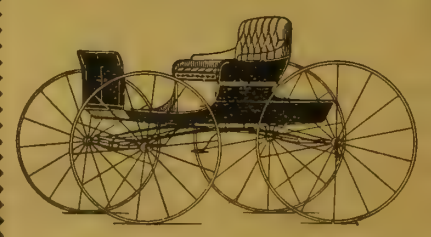

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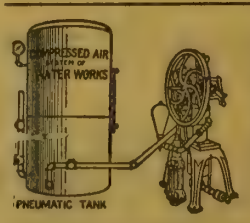

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Los Angeles June 6 1907 San Francisco

The Irrigation of Orange Trees

THERE are three methods of irrigation in California, viz., the furrow, the basin and the zig-zag systems. Our illustration gives a clear idea of the practical working the furrow. As the name implies, the furrow system consists of several furrows plowed between the rows of trees, and down these the water is allowed to flow gradually until the ground is thoroughly saturated. In furrow irrigation the water should be allowed to run very slowly in order to percolate through the soil to a considerable depth and at the same time prevent its washing down and leaching out the ground.

The basin system consists in each tree being basined, an operation usually performed by a plow or what is known as a blocker or ridger, which consists of a V-shaped implement made of wood and iron or iron alone. This throws up a ridge or embankment of earth around each tree, which is allowed to fill with water from the main furrow, once or twice. In this way the whole grove is treated, each basin being filled independently from the main furrow between the rows of trees which tap your main supply ditch.

The zig-zag system is an improvement on the basin system, and consists in the orchard being first cross-furrowed, then ridged lengthwise as indicated. Its chief advantages consist in obviating a baking of the soil by not covering the entire surface of the ground with water, thus affording sufficient dry earth to make a mulch when cultivated over the entire irrigated surface (an operation which can be done sooner after irrigation than in the basin system.) This leaves the soil friable and at the same time conserves the moisture in the ground, which obviously is a great advantage over the basin system.

Irrigation on rolling or hilly ground is of itself quite an art, and is practiced by running furrows on the contour so as to guide the water without overflowing and thus flooding the soil. The artificial application of water to side hill orchards is only feasible by the furrow system in the manner indicated in the illustration.

It is an axiom among fruit growers in Southern California to first find your water and then look for a good piece of land on which to put it. This illustrates the importance of a reliable supply of water for irrigation purposes when planting and cultivating an orange grove. Indeed, in the climate of California, portions of Old Mexico and far-off Australia and South Africa, citrus culture is only feasible where there is an available water supply with which to carry the trees over the dry season.—From "Citrus Fruits," by R. M. Teague.

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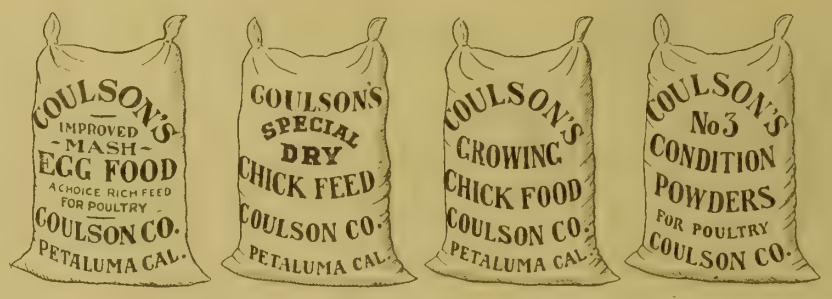
Are Better Than Ever



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up to three months old, when the pullets can be fed

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This will insure you healthy stock and plenty of eggs. At this time of the year a little of

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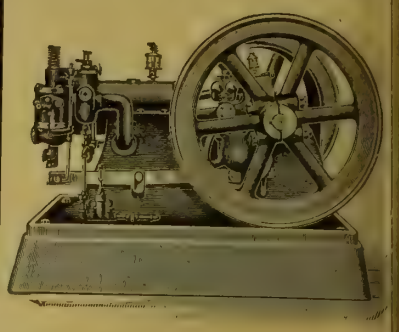

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They are beautiful birds; Rocks as white as snow Minorcas black as a crow. Cocks from W. M Humphrey's and Harry E. Rose's yards. Eggs fo sale. Best pen, $1.50 per setting of 15, or $7.00 pe hundred. Second best, $1.00 per setting of 15, o $5.00 per hundred.

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WHITE WYANDOTTES *Hubbard Stock* heavy-laying prize-winning strain. Commencing June 1st, eggs, $5.00 per 100; baby chicks, $2.25 doz. Cannon Poultry Co., 2851 Morgan Ave, Los Angeles Take Slauson Ave. car to 29th St., walk 1 block west

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WHITE, BUFF COLUMBIAN WYANDOTTES
And Golden Sebright Bantams, prize winners
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California Cultivator

Vol. XXVIII—NO 23 Los Angeles, California, Thursday, June 6, 1907 Subscription $1 a Year

Citrus Fruit Growing in California

A Magnificent Publication in Which is a Great Fund of Information on Citrus Fruits

The Washington Navel

"The Most Valuable Orange Known," is What Teague's "Citrus Fruits" Calls the Washington Navel

THE ENTERPRISE and up-to-dateness of California tree growers is proverbial. The great fruit interests of the State have brought into being many extensive nurseries and these are largely managed by shrewd men with modern ideas of business.

One of the largest of these, and with best of reputation, is the San Dimas Citrus Nurseries owned by R. M. Teague. This is mentioned at this time because of the recent issue of a catalogue, or more properly a Treatise on Citrus Fruits, which is such a remarkably fine publication of its kind that it is well worth this space. It is a 48-page, 10x12-inch book on fine coated book paper and filled with illustrations showing nearly every feature of citrus culture from the starting of the seed to packing of fruit, or to be more exact, we quote the title page:

"A preachment on their culture from the seed to the full bearing orchard, describing methods of propagating, budding, cultivating, fertilizing, irrigating, packing and shipping."

In the matter of fruit packing there is a series of plates showing the various standard packs, both of oranges and lemons.

A Great Industry.

Regarding the importance of the industry, the preface of the book says:

"No one industry has done more to individualize Southern California than the growing of citrus fruits, of which she now produces larger quantities than all of the remainder of the United States combined. And this is not by chance, nor because the industry has found the greatest investments of capital, but because the soils and climates of this section are peculiarly to the liking of the orange and the lemon tree. To show how thoroughly this fact has become recognized in the markets of the world, it is only necessary to note the onward trend of the industry since it assumed national importance in the annals of trade and the statistical division of the National Department of Agriculture. The figures tell the story more forcibly than mere words."

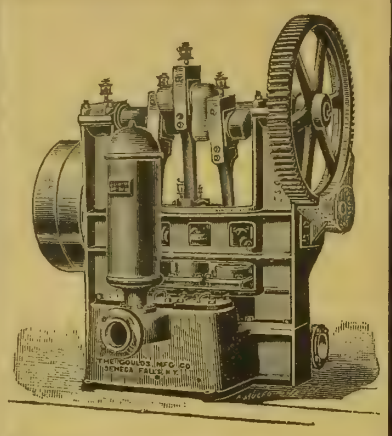
Then is given a table of shipments showing the increase of Southern California shipments from 4016 cars in 1891-2 up to the banner year of 1904-5 with its great output of 28,000 cars, with a money value of nineteen millions.

The great importance of the industry is given as the reason for issuing so an elaborate treatise as Mr. Teague has sent out. The varieties of citrus fruits are not only fully described but illustrated with remarkably fine half-tones. One peculiar thing about the book, is that while it is issued primarily—we assume so at least—to sell nursery orange trees yet, occupying a considerable space, freely illustrated, are full instructions on growing and budding nursery stock. In other words, he is giving his whole trade away. In that respect he is like a certain great sculptor who was approached by an anxious mother who hoped for her son the fame of a great sculptor. She asked the secret of great success and was answered: "It is simple indeed. Take a block of marble and with a chisel knock off all the marble which you do not want left for the statue."

The growing of a young orange tree is still more simple and Teague gives all the details, but we assume that he will continue to find market for his magnificent stock for many years to come for, coupled with his fine goods, is courteous and thoroughly honorable treatment.

Mr. Teague is an honor to California nursery business.

The Orange Grove Which Teague Sent to the St. Louis Fair



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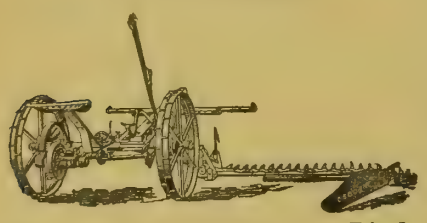

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$1.50 per dozen; $6 per 100; $40 per 1000. Plant now and get returns next winter. Pedigreed plants only.

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500 choice one-year-old Valencia Trees, $60 per 100.

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ITCHING Piles produce moisture and cause itching. This form, as well as Blind, Bleeding or Protruding Piles are cured by **Dr. Bosanko's Pile Remedy.** Stops itching and bleeding. Absorbs tumors. 60c a Jar at druggists or sent by mail. Treatise free. Write me about your case. DR. BOSANKO, Philada., Pa.

Deciduous Fruit Culture

CARE OF VINEYARD.

NOW is the critical time of the year for the coming grape crop. Its arch enemies, the mildews begin their work. There is, however, but one of the mildews known in this State, that being the powdery mildew, This is bad enough and if not taken in time will destroy the whole crop and injure the vines besides. It attacks the fruit, foliage and growing canes.

The locality in which the vineyard is makes a difference in the severity of the attack. Interior valleys are more free from it than those near the coast or within the influence of it. We are told that in the desert regions powdery mildew does not exist and sulphuring is not necessary.

Powdery mildew is usually seen first, about the time the blossoms open and can be distinguished by light-colored patches on the leaves and tender growth. The fungus does not enter the tissues deeper than the outer layer of cells and therefore can be destroyed or checked at any time during the growing season. The gas or fumes given off during a hot day will kill all the mildew that it comes in contact with.

If the mildew is bad, it sometimes affects the setting of the grapes. Sulphur will also affect the setting when the temperature gets above 100 degrees, but this cannot be ordinarily expected as such temperatures rarely occuring so early in the season. Such temperature will destroy most of the fungus in exposed places; Bioletti says that a few degrees above 100 will kill it.

The proper time to sulphur is about blooming time. Under ordinary conditions, sulphured vines set the fruit better than when no sulphuring is done. If there are signs of mildew after the grapes have set, sulphur again and it is not likely that it will be necessary to do so again. Some of the late ripening varieties are affected during a damp period in the fall before the grapes turn in color. After the grapes turn in color, there is no further trouble. Sulphur will do no good unless the temperature rises to about 80 degrees. If the sulphur is evenly distributed, such a temperature will destroy the mildew. If no damp weather occurs during the remainder of the season, there will be no further need of another application if a thorough job is done.

Vines in the shade of trees or a building are more susceptible to mildew than those in the vineyard form. Trellised grapes are more apt to be bothered as are also vines with a dense foliage. Varieties vary in this respect and this is mainly the reason why some varieties are more susceptible than others. The fact that this mildew thrives best when protected from the influence of the sun, makes the difference and also allows the grower to make the vine less liable to attack by judicious thinning of the new growth. Sulphuring is, however, the most economical manner of combating it and applying with a blowing machine is the best method. These machines may be had at any of the seed houses. Sublimed sulphur is the best as it is the finest in grain and pound for pound has more exposed surface than any that is ground, giving the air a chance to send off the fumes more rapidly.

No man finds himself until he is willing to be lost.

SOME MISNAMED CALIFORNIA GRAPES.

All of the common grapes of California have been introduced from some part of the Mediterranean region where they have been growing for hundreds or thousands of years but most of them have been given incorrect names here.

This renaming has been due in some cases to a mixing of labels, in others to incorrect guesses of Europeans who thought they recognized the vines of their native soil, and in still others to the inventive genius of the first distributors of the varieties, who chose the name which they thought most likely to attract customers for their grapes or cuttings.

Some of these new names belong to other varieties and make our nomenclature confusing and misleading. The true Golden Chasselas, for example, is a very different grape from that which goes under that name in most vineyards of California. This "(Napa) Golden Chasselas" is the Palomino, the chief sherry grape of Southern Spain, much grown also in South Africa under the inappropriate misnomer of "White French." The real Chasselas, a much inferior grape for our conditions, is the variety known in Sonoma by its German name of Gutedel.

Another substitution of a similar kind is that of Feher Szagos. This name, which means "aromatic grape," is applied in Hungary to large table Muscats, and is quite inappropriate for our neutral flavored grape whose proper name is unknown. The Zinfandel and Burger are not the grapes known by those names in Europe and their identity has never been determined.

The name Flame Tokay was also an unfortunate choice. Tokai is the district which produces the finest wines in Hungary which are known in commerce under the name of the district. There is no grape of this name, and the variety from which the wine is made, the Furmint, is white, juicy and totally unlike our principal shipping grape.

Our Flame Tokay is probably the Algerian grape Amar bou Amar (Red Father of Red). The description of this variety fits ours exactly and some vines imported by the University, though they have not fruited yet, show identical foliage.

The Seedless Sultana is a similar case. This is not the grape from which the Sultana raisins of commerce are made. It is probably the Kechmish of Turkey.

Another of our most widely grown varieties of the Sultanina, which had lost its euphonious name and was dubbed Thompson's Seedless. It is certainly desirable to restore its true name and it should not be difficult with the help of the late correct labeling legislature.

The origin of the Mission is still an unsolved riddle. The vine closely resembles the Monica (Monk's grape)) of Sardinia, but is not identical with that variety as introduced in the University collection. It may be simply a variation of it due to centuries of unconscious cutting selection.

Our Cornichon is the Malakoff Isjum (Corporal's grape) of Turkey and our Malaga probably the Panse of Southern France.

What our Emporer, Verdal and West's White Prolific are remains undetermined.

Don't Push

The horse can draw the load without help, if you reduce friction to almost nothing by applying

Mica Axle Grease

to the wheels. No other lubricant ever made wears so long and saves so much horse power. Next time try MICA AXLE GREASE.
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The following is a list of most of our renamed varieties with their proper titles so far as known:

Thompson's Seedless,..... Sultanina.
Napa Golden Chasselas.... Palomino.
Crabb's Black Burgandy... Refosco.
Pfeffer's Cabernet..... Robin Noir.
Cornichon ..... Malakoff Isjum.
Flame Tokay ..... Amar bou Amar?
Seedless Sultana ..... Kechmish?
Mission .... Monica?
Malaga.... .... Panse?

Emporer, West's White Prolific, California Black Malvoisié, Zinfandel, Burger and Feher Szagos are still undetermined.—Frederic T. Bioletti, Berkeley, May 27, 1907.

BUDDING OLD GRAPE VINES.

Now is the time to bud over old grape vines. This is not grafting, as the season is too far advanced for that. The process is known as herbaceous budding. That is, budding in the succulent wood.

The work is done when the young growth is so far advanced as to have fiber enough to allow the branch to bend slightly without snapping. The buds are selected from buds which have the leaves nearly developed. The bud is inserted in a new cane by making a slit lengthwise with the cane, but do not make a cross cut in the slit. If it is done in the right place, the bark will bulge away from the wood when the cane is bent with the fingers. Place the bud which is cut in the ordinary way under the bark and when the branch is released it will draw the bark tightly down onto the bud, making it fit closely against the cambium layer. Wrap with a piece of cotton cloth cut in narrow strips. The leaf that grows at he base of the bud should not be removed entirely. Cut it so that a piece about the size of a quarter of a dollar will remain. Insert the bud with the leaf stem and that much of the leaf. If the bud takes the leaf stalk will remain green and will ripen and separate easily from the bud. If it does not grow, the leaf stalk will dry up with the bud. The cloth bands should be removed before they bind the canes. These buds had better be allowed to remain dormant till the following pruning season. At this time, make the cut one bud above the inserted one. Very often the last bud dies or gets broken and the long end will afford protection. After the bud is well started, the stock can be cut back to the bud.

MANURES AND SOILS.

Soils breathe quite readily as animals and this breathing is quite as essential to the fertility of the soil as the breath is to the life of the individual. In other words, in all soils in proper cultivation there is a movement of air both downwards and upwards and this air is quite as essential to the life of the plant as it is to the life of the animal.

The forces which cause this soil breathing are various. As the pressure of the air upon the surface of the earth is about fourteen pounds to the square inch, it can readily be seen that the spaces between the soil grains that are not filled with water are necessarily filled with air under normal conditions. The weight of the air varies with the changes in temperature of day and night. Hence the pressure varies, which promotes soil breathing.

When the hot sun beats down upon the field so that you can see wavelets of air rising, it necessarily follows that there must be an upward movement from the air in the soil as well. When night comes and the atmosphere cools down, there is correspondingly downward movement.

Then, again, there is a marked difference in the weight of the atmosphere at different periods. Any one who will examine the weather chart will see that the barometer sometimes rises to 30.2, which means that the weight of the air is equal to a column of mercury 30.2 inches deep. At other times it runs down to a little over 29, a difference of 3 per cent. in the weight of the atmosphere. This, again, promotes soil breathing.

Then, again, the winds as they smite the earth with the air tend to promote soil breathing. Drainage also promotes soil breathing, and in the most effective way. When you dig a ditch through a piece of very wet land you find the water rushing from the bottom and from the sides. These lands have not produced good crops of our ordinary grasses simply because the air upon which they depend could not find access to their roots. As the water passes out it leaves air spaces, which are promptly filled by reason of the pressure of the atmosphere upon the surface, thus supplying the roots of the plants with the life-giving oxygen. When the tile is laid and there is no water in the drain, air necessarily enters, comes in contact with the soil and makes the drainage much more perfect. This accounts for the fact that it is possible to drain land that has very little fall. The pressure of the atmosphere forces the water out into the tile and outward.

What hinders soil breathings? The most effective hindrance to soil breathing is the formation of a crust on the surface. It does not wholly prevent it, or else plants could not live at all, but it does prevent free soil breathing and accounts for the delicate condition of plants of any kind when a crust has once been allowed to form upon the surface. This lack of thrift is not wholly due to the lack of air, but when a crust is formed and connection between the water below and the air is complete; hence soils dry out rapidly and plants suffer from the lack of a sufficient supply of both air and water.

If the farmer wishes to have a thrifty growth of any kind of plants he must by every means possible prevent the forming of crusts, not merely by breaking up the crust when it has formed, but by keeping his soil so well supplied with humus that a crust does not form readily.

On the other hand, the dust mulch favors soil breathing as well as the conservation of moisture. This explains why a well-cultivated cornfield produces such a remarkable growth, while the poorly cultivated field on the same land produces only from half to two-thirds of a crop. These are some of the simple things which every farmer should understand and upon which the prosperity of himself and his family depends to a greater extent than he knows.

The New York State Grangers did one thing that the farmers all over the country will have to do sooner or later; and that is, sound a note of warning in the matter of road making. In some places where the state has undertaken the construction of the public highways, great political machines have grown up that are fairly robbing the people. Good roads are a blessing, but they ought to be built so that they will not entail a grievous burden of taxation upon us and our children. —The Ranch.

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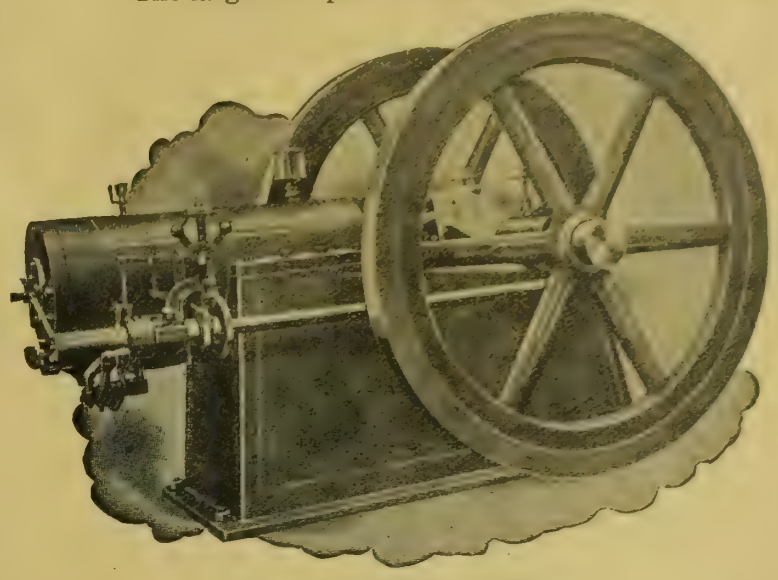
Columbus Machine Co., Columbus, Ohio

Have stood the test sixteen years.
The largest output in the United States



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Gentlemen—For about four years, I have used a Columbus engine of ten (10) horse power; which has been running a 3½ Vertical pump and pumping about 35 inches water with a 90 foot lift, and when the time came to buy a new pumping plant for my ranch near Anaheim where we we shall need water for about 200 acres, I decided to have a 60-horse Columbus engine installed, and placed the order with you because I expect to havea pumpimg plant that cannot be excelled.

Respectfully, E. B. BARY.

This 10-horse engine is pulling 13½ horse power. We are installing a 60-horse plant for Mr. Bary, 3½ miles north of Anaheim. Come in and let us demonstrate the simplicity of Columbus Engines.

Greenleaf-Compton Co.

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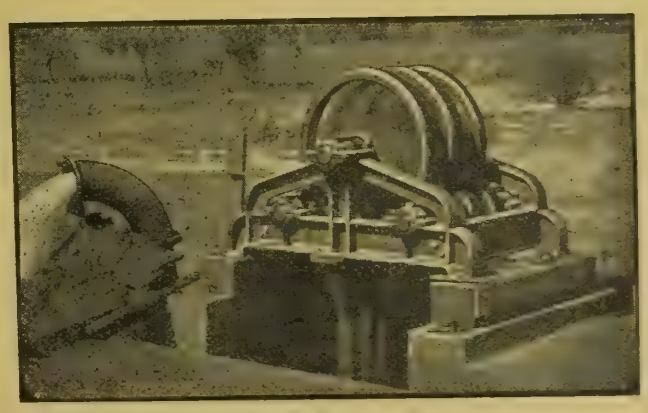
Addison Double Plunger Pump Head



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That is one reason why you should insist upon having the Tubular. Tubulars are different, in every way, from other separators, and every difference is to your advantage. Write for catalog S- 260 and valuable free book, "Business Dairying."

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Live Stock and Dairy

CORN.

WHERE corn is grown year after year, it pays well to have proper tools to plant and harvest the crop. Handwork is too expensive and men to unreliable to be put on to long-drawn-out work. The price of labor in California has grown in great leaps and bounds until today it is out of all reason. Only special crops such as oranges, grapes, melons and a few others are able to stand the heavy advance. Many farmers are growing melons to meet the expense of harvesting the hay crops that they must have to feed the horses. The hay crop promises to be short as it cost too much to plant last fall. These conditions are largely caused by the heavy draft of San Francisco on the farmers for horses, wagons and men. I know men that usually have twenty or thirty horses, and plow for their neighbors, that this year have had all their force in San Francisco working for wages; wages that would the winter before have bought the outfits in a couple of months. These are the reflexes of conditions that will not last long but are trying at present. The men at present, that had any glimmering of a knowledge of building craft, have been unionized and are in San Francisco working for seven dollars a day. At least so they claim. Some, however, are fooled. We had one boy leave on a promise of eight dollars a day as stationary engineer; in a month's time he was back running on an ice wagon at $50 a month and not "found," while on the ranch he had forty and found. Today we have had to cut up the big teams and can do little work, not even hauling, with more than a span of animals as four-horse drivers are not to be had. Only the older horses can be trusted in the incompetent hands; horses that are wise enough to take care of themselves and of the driver to.

Tools Needed.

The lister with a drill attachment is an ideal tool for California. The land is well cultivated, then furrowed and the lister puts the corn into the bottom of the furrow and covers it deep enough to make it start to grow quickly. In California it pays well to soak the corn over night as the water helps it start quickly. After the corn is up the cultivators begin to crowd a little dirt each time they run into the furrow. Every observer in a corn field must have noticed the roots that start from the stalk up to the first joint? These abort and remain dormant as they do not, under usual conditions reach the moist, cool earth to take up their natural life. The earth that the cultivators push against the stalks is warmed, sunned earth that lies lightly and these roots penetrate it and start to feed the growing corn plant.

The corn is given a double rooting system and the lowest ones are deep down where it is cool and moist, while the upper ones are where the sun is hot and the air penetrates freely. How do I know this? By personal observation. After the corn is cut, a deep furrow is run along side of the roots, another under the roots turns them out and the conditions can be observed. The corn roots shows a double and sometimes tripple series of roots coming from the stalk, when carefully dug out it is a mass of fibre four feet in circumference and two to three fet deep. Sometimes at he end of the rows the corn is shallow sown, this corn never makes the fine growth that the other does and shows when plowed up a weak root, all on the surface.

Irrigation.

Deeply planted corn with plenty of cultivation will often make a fair crop without irrigation. The amount of humus has much to do with retaining of moisture in the soil. This is a question out of my line as Stock and Dairy writer, but none the less I feel it is a matter that every grower of crops should think about. Corn well watered at tasselling time should produce abundantly of leaves and ears. The use of irrigating water is greatly abused around Fresno. The soil is crying out for humus to hold moisture; not for water directly applied. I know a fine vineyard that the original owner went to the expense of underdraining the land. The soil is naturally rather devoid of humus and settles down without air. Now if a quantity of stable manure, or straw, or cover crops had been planted this land would have grown richer and better each year. Instead of that the owner and foreman are constantly complaining that the ditchs (formerly in use only a few weeks) are not big enough. Water has been poured on the soil which grows dryer and dryer, commercial fertilizers have been put on, the soil is compact, and hard, for it has no air. The water carries a little air into it, but if the water should fail altogether for a year this place would die out badly. It is saved from a rise of alkali by the under draining, or else it would have gone out altogether. Now it is being leached out of fertility until in places the soil looks like sand that has been washed and re-washed for a filtering plant, so lifeless has it become.

Planting the Corn.

On moist land that has been well plowed and cross cultivated until it is in good neart, the lister can be well combined with the drill or planter and two rows listed at once. By using a double mould board the corn can be put into a shallow furrow with the planter. The reason for planting in the furrow is that if the grain of corn is placed more than four inches under ground, it does not come up strong and vigorous. The tiny plant depends on the food stored up in the grain to live on until the root system has developed and the plant becomes established as an individual; then by putting a little more dirt around it, the plant throws out more and more roots until we have obtained the object sought, of making corn a deep rooting plant without checking its vitality. Corn, or indeed any of the annual crops must never receive a check in their growth if good results are to be secured at harvest time.

Distance Apart.

If the corn is for soiling the rows are four feet apart, the corn in the rows is usually six inches apart. When grown for the ears every two feet apart in the rows seems about right. We find it pays to go over a field by hand and replant any missing hills, two weeks after the first planting. Keep the cultivation up and when it is necessary to turn the water on the corn, run a furrow between every other row and irrigate in the furrow to a point of saturation and then as soon as possible throw the earth into the furrow to keep the water from evaporating. Do not leave the furrow to become crusty and crack, for that will draw off more water from the subsoil than in all probability has been put on it. In the corn field this year I intend to sow field peas and oats and let them come up as they will. This will give, we nope, some early green stuff for the cows that can be cut later for the silo. In cultivating corn after it has started to grow shallow running tools should be used that will not cut the roots badly. When the plow has to be used it comes only into every other furrow, that cuts only a quarter of the surface roots. A wide cultivator with four horses abreast taking two rows at a time is a labor saving tool. These are set with the teeth shallow. The man rides and can see the row of corn he is over as it passes under the pole between the spans of horses. Another form of riding cultivator has come into use that uses three horses abreast. This requires more skill to use as the men get mixed and frequently go over the same or rather over a portion, say one-third of the ground a second time. The four-horse machine can easily handle twelve acres a day, usually three cultivatings is all that there is time to give them corn before it grows too tall. The ground is then shaded and the need of saving the moisture from the sun action has passed. As long as the ground is exposed to the sun, if it is not frequently stirred, it forms small ducts or air passages in to the ground and moisture is evaporated rapidly and dispersed.

The Holstein-Fresian Association reports the following sales of California Holsteins: Princess Captain of Riverside, L. A. Hall to A. B. Kendall, Modesto. Teake Lyons 3d's Butter Boy, L. A. Hall to D. Baldwin, Ceres. Fargo Gem Pietertje of Edgetown, D. Lehmpohl to Leland Stanford, Jr., University, Stanford University. Sir Aaggie Josephine Mercedes, J. H. Williams to W. E. Campbell, Porterville. Sir Johanna Cleome Barbetta, A. C. Demerit & Son to Leland Stanford, Jr., University, Stanford University.

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TO FEED WITH ALFALFA.

In answer to a California enquirer as to a feed to give with alfalfa to balance the ration, Hoard's Dairyman says:

It is seldom possible to suggest a "best dairy ration." In fact, no one knows what combination of feeds will secure the most profitable results at the pail and, at the same time, insure the continued usefulness of the cow as a breeder and milk producer.

It is desirable to have some succulent feed for cows throughout the entire year, either from pasture, silage, roots or soiling. If for any considerable time such feed is not obtainable, we unhesitatingly advise feeding a moderate amount—two pounds or less per day—of linseed oil meal or cocoanut meal.

Alfalfa hay being rich in protein and low in carbohydrates and fat, does not make a well-balanced ration. Neither is it practicable for a cow to eat enough of it to furnish the nutriment required for maintenance and the production of a liberal amount of milk.

For example, a cow weighing 1000 pounds and yielding 25 pounds of 5 per cent. milk requires, at least, about 2 pounds of digestible protein, 13 lbs. of digestible carbohydrates and one-half pound digestible fat. There can be some interchange of these elements, surplus protein, for instance, taking the place of deficient carbohydrates.

Experience has shown that 20 pounds of dry forage is about the limit that a cow can eat in one day with profit. If called upon to eat more, the extra energy required to masticate and digest the excess detracts very materially from its productive value. Now, in 20 pounds of alfalfa hay, of average quality, there is 2.2 pounds digestible protein, which is ample for the 25 pounds of milk, as above, but only 8 pounds of carbohydrates and one-fourth pound fat. To supply the deficiency in these elements there is nothing that is quite equal to corn. But ground corn is too concentrated for either safe or profitable feeding. It must be diluted with some more bulky material, such as bran or chaffed hay. So, in this case, instead of feeding the ground corn by itself, cut some of the alfalfa hay quite fine and mix it with the ground corn, in the proportion, say, of pound for pound.

While we have had no personal experience with silage made from alfalfa and corn, we are firmly convinced that such a combination would be entirely practicable provided both crops were simutaneously in proper condition for harvesting. If not, they should be put in separate silos and silage taken from each daily. But it should not be forgotten that silage alone does not make a satisfactory ration. They need some dry fodder—nothing better than alfalfa hay—and some grain, preferably corn or barley.

The number of cattle on the Island of Guernsey is estimated to be 4000 to 5000 and, if this is true, only about 50 per cent. to 60 per cent. are registered, for 7000 females have been registered and much more than half of them are dead or have been sold. In driving over the island you would see many fine cows in a field and stopping to inquire would find they were not recorded.

Cream Separators, all sizes, all prices. O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

THE HOLSTEIN.

Here is an appreciative little sermon on the worth of the Holstein-Fresian by its warmest friend, the Holstein-Fresian Register. The other dairy breeds have some warm friends; let them speak up:

The intelligent dairyman, who desires and intends to establish a milk herd, will study the dairy breeds from all sides and from all points of view. Such a man will find, if he be liberal-minded as well as intelligent, if facts of achievement and truths of record appeal to him strongly and normally, that every element in the problem before him points in solution to the Holstein-Fresian breed as the breed he should adopt. The commercial feature of milk production drives straight to the Holstein-Fresian conclusion. The Black-and-Whites can make more milk, and therefore cheaper milk, than any other cows. They are, practically, the only cows in commission whose cost of making milk has been low enough to enable producers to sell at a profit at the liquid-market prices that have prevailed in the Middle States and the New England States during the past fifteen years. The chemical and dietic features of milk point Holstein-Friesian ward. No other cows produce milk so nearly identical in composition with human milk. Consequently no other cows are comparable with the Black-and-White producers of food for human beings. This quality is recognized by the scientific food experts of Europe. The butterfat in the Holstein-Fresian milk is exceedingly small in grain and so perfectly emulsified in the whole milk that it answers perfectly every demand conceivable for a perfect article of food. The general utility element will lead to the Holstein-Fresian conclusion. After the great-yielding Black-and-White cow has made yearly profits for her owner, and has reached the retiring age, she is not a worthless asset. She is still capable of making a very profitable windup of her long and profitable existence. She can be fattened as well as though she were to the beef-cow-manner born, and her giant carcass will furnish meat that will top the market prices. The consideration of prolificacy will carry the investigator to the Holstein-Fresian conclusion. He will learn that these cows are unequaled for breeding, for bearing and for rearing their offspring. The question of quality in cheese and butter will solve itself along the Holstein-Fresian line, and with the quality will go the quantity. There is no essential in the milk problem that does not point Holstein-Friesianward. Because this is indisputably true, it is certain that the breed will grow in favor with all the really progressive producers of milk.

MUTTON CHOPS.

Save the bean pods and give them to the sheep.

The forage ration should preferably be bright, clear hay.

If the sheep are not in good flesh give them about two gills each of grain

Protect heavy wooled sheep from cold rains. The weight of the water will sometimes prevent the sheep from rising.

Make the sheep tame by kindness. They will do better for it. Keep away the dogs; bells on every fifth sheep will do it.—Farm Journal.

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

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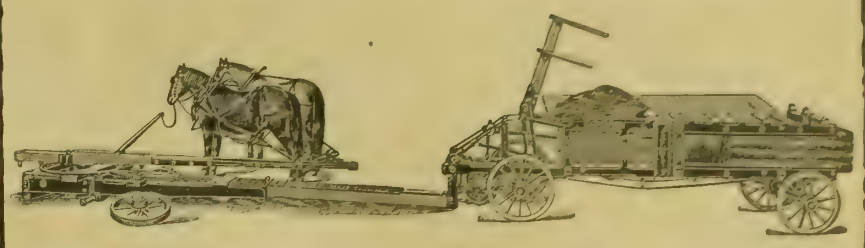

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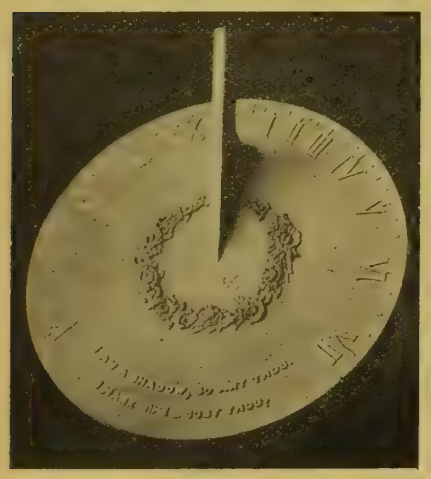

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The Ornamental Garden

THIS MONTH.

THIS is a good month to watch things grow. To grow requires water, air, warmth. The warmth will doubtless be at our command. The air likewise, at least as to the tops of the plants, but bear in mind that the roots, or, at least, the best soil conditions at the roots, require air. Air cannot go to the roots through a baked or hardened soil. A well loosened and cultivated soil admits air and thrift of plant results. Don't imagine for a moment that keeping down weeds is the sole advantage of cultivation.

If the above be true, then the constant sprinkling on the surface of the ground about the plant, with never a loosening of the soil, is objectionable. Therefore, when you wet the ground about a plant, soak it. Then, spade and rake and hoe and, rake some more. Then, later, don't be in too big a hurry, but when it needs it soak it again. A little fertilizer added, the keeping off of pests and other requirements also have to be met, but results justify it.

Above all, this is a good month to remember that old adage, "tillage is manure."

Keep the lawn well in hand. Touch it up with a little well-rotted manure; say, a couple of inches deep, well washed into the soil with the hose. Then after two or three days rake off the surplus so that no injury occurs by smothering out the grass. Or a light application of bone meal is fine.

Trim edgings of borders and hedges. Dahlias and Gladioli may still be planted. Sow Eucalyptus and Cypress seeds for winter planting.

It is also a good plan to "slip" a few geraniums and put in pots for ornamenting the front porch. A geranium makes a beautiful house plant. They're so common in California that we are too prone to regard them almost as weeds. But the writer has one that has caused more favorable comment than a five dollar kentia, and yet all it cost was a little care in "slipping" a "Gen. Grant" geranium and changing from pot to pot until now it is a beautiful specimen of plant with a wealth of gorgeous red.

THE POPULAR WATSONIAS.

It is doubtful if South Africa has ever sent out a stronger candidate for public favor than the White Watsonia; certainly not in the long list of "Cape bulbs." Other species, ranging in color from rose-pink to scarlet, are sparingly grown, but the White Watsonia (W. O'Brieni) is more in demand at present than any other bulb.

The botanical difference between Watsonia and gladiolus are very sligth, and it might well be termed a white species of the latter; but, horticulturally, it is of greater value than any gladiolus in the market.

One of the strong points lies in the purity of its color; one dealer in England advertises it as "the whitest flower on earth." Another point of excellence is its long period of bloom. It is what florists call a "laster," for not only is it a good keeper after being cut, but a bed which came into bloom for Easter cutting is still covered with blossoms, though nearing the end. The flowers are often three inches across and are more nearly bell-shaped than the usual gladiolus. From a good, strong bulb there will often grow a branched spike five or six feet high, containing nearly two hundred flowers. These bulbs seem to thrive equally as well as in California as is the case in their native home, and with the strong demand coming from all quarters of the globe, it is likely that this State will lead in their production. It is a flower that should be found in all our gardens for they need little care and increase rapidly so that from a modest beginning one may, in a few years, have more flowers than could well be used in a single home. These bulbs are also sold under the trade name of Watsonia ardernei, but they are one and the same species, though doubtless there may be found two or more of what growers call different "strains" of the same species. Get the white for your garden, no matter what name is attached.

COOPERIAS.

Cooperias are interesting bulbous plants growing in New Mexico and Texas. They are of the amaryllis family and are a small genus of only two species, C. Drummondii and C. Pedunculata. Botanically they are separated from the zephyr flowers only by some small distinctions in their anthers and some difference in the character of their leaves. From a garden point of view the chief distinction is that the cooperias known as the giant fairy lilies and evening stars are night flowering, while the zephyr-anthes prefer the more conventional daylight. The C. Pedunculata has the larger and more attractive flowers, which are two inches in diameter, white and rose tinged on reverse petals. C. Drummondii are of same coloring but smaller, while the variety chlorosolen has greenish tints. The bulbs of these two families seem to occur in swampy or wet ground, although they flourish in ordinary garden borders, but like all bulbs, they will not continue to prosper unless properly nourished and grown till the new growth is perfected. The leaves are one-half inch wide and about eight inches long, flowers of good substance and fragrant.—Field and Farm.

FLOWER DISEASES.

In carnation bud rot, the petals rot before the buds open, or immediately after. In severe attacks the buds will never open, while in lighter attacks the flower will partially appear, but begins to rot before it is fully expanded. The only effective treatment is to pick off the affected buds as fast as they appear and destroy them. Spraying with Bordeaux mixture has been tried a number of times but has not proven effective.

Rose black spot may be overcome by spraying with Bordeaux mixture before the buds unfold. The solution used should be four pounds copper sulphate and six pounds of lime to fifty gallons of water. Ammonia copper carbonate should follow once each week. The diseased and fallen foliage should be gathered and burned.

FURNISHING THE PORCH.

The porches of a country house are now quite as important as the living rooms. They are built wider, in order to give plenty of space for furnishing. Rag carpet rugs make a serviceable covering there, as well as for the whole house. Sewing carpet rags should be a popular pastime this summer. Now that the rag carpet is so fashionable, even the best stores are dealing in it.

WINDOW GARDENING.

Geraniums will bloom earlier and better if put in small pots and besides they are much more convenient and really look better in windows.

The modern window sill is too shallow in depth to hold large pots. A very fine plant may be kept in bloom and good condition awhile in a very diminutive pot by using once a week liquid manure which is immediately appropriated by the roots. Soot, ground bone and ammonia are excellent also.

A simple shelf may be made for the window by slipping a board eight or ten inches wide under the lower sash and letting it rest upon the window ledge; cover with drapery to match the room furnishings, and allow it to fall over the front and ends a few inches; cover the top with a newspaper to catch any litter, and if small pots are used a display will be made. Turn the pots daily so as to avid the one-sidedness so common, and which spoils the appearance of many fine plants.

Dig around the plants occasionally, and probe in fissures which open into the saucers so as to admit air to roots and thus prevent clogging.

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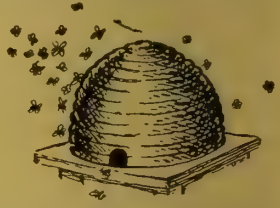

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The Vegetable Garden

THIS MONTH.

THIS is the "betwixt and between" month but the vegetable garden may yet furnish opportunity for new planting.

Of course all earlier plantings must have careful watering and cultivation. Run out the weeds, run in the water. The cutworms are gone but there are others. Watch 'em.

Plant lettuce, radishes, corn, beans, and if you have'nt a plenty, put in melons and spinach. Pole the beans and tall peas.

Eat a little green corn to remind yourself how wise you were to make that extra early planting of fine sweet corn.

Spray the tomatoes with Bordeaux, and if the lice, aphis, are still bothering give a touch of whale oil soap, or if too busy to mix it and get down the pump, shake some fine ashes over them through a "mosquito bar" netting bag.

Don't work too hard, but just hard enough, and see if the garden does'nt taste better than the Chinaman's wilted truck.

SUMMER VEGETABLES.

It is rather late in the season for planting vegetables as it is now rather between seasons, too late for spring and too early for fall work. Still there are many classes of vegetables which can be sown for a succession of crops and in order to keep the table going. Beets may be planted at any time and, with proper care will grow rapidly and do well. Beans can be relied upon to give abundant string beans for the table and to ripen before cold weather sets in. Sweet corn may be sown with every assurance of plenty of roasting ears. Tomatoes may be set out for a late crop. Cabbage and the various members of this family, cauliflower broccoli, Brussels sprouts, etc., are always in season, and plants may be set out now for late crops and seed sown for plants for later setting. The summer season is not the best for growing good cabbages, as the hot weather forces them too rapidly and they are not so tender as when grown in the cooler season. Still, for a succession, they are always ready and with care will give good results. Potatoes may be planted for late fall use, and in fact most of the common summer varieties will yet do well if given proper care.

VEGETABLE GROWING.

With the soil and climate of California there is no reason why the owner of a small piece of land should not have fresh vegetables for his table every month in the year, and none taste so good as those which are gathered fresh from the garden and passed at once through the kitchen to the table There is no comparison between such and the stuff that has been hauled over half creation in the pedlar's wagon, or exposed to the hot sun for hours on the huxter's stall. Vegetables are so easily grown here that too many of us pass them over in utter contempt, as not worthy of our labor, and yet such labor, small as it would be, would be amply rewarded by the results. These requisites are demanded for growing good vegetables: Cultivation, irrigation, fertilization: The soil has got to be constantly stirred to keep down the weeds and let in the air, without which no form of vegetable life can thrive; all vegetables are shallow rooting, many of them not penetrating the soil over two or three inches, and unless there is ample moisture they will soon perish from drought. The soil must be kept damp by frequent applications of water, and these should be copious as well as frequent, the ground should be kept moist for at least a foot in depth and never allowed to dry out. Table vegetables are gross feeders and require abundant fertilization. Whenever a crop has been gathered, liberal application of well-rotted stable manure should be applied before a second crop is planted, and this second crop should not be the same form of vegetable as the first, but there should be a constant rotation of crops. With these hints followed, and proper care exercised in the selection of varieties suitable to the different seasons, there is no reason why anyone, with a few square yards of spare land, should not grow his own vegetables and always have them fresh and crisp for use.—J. I.

LIFE AND HABITS OF CUTWORMS.

There is so much being said about cutworms, often called army worms, that is in some ways misleading, that I will give my version.

I have made a practice every year when we are troubled with cutworms of breeding them out in large numbers for the purpose of getting good specimens for my insect case; to settle differences of opinion, and to ascertain what per cent. of the worms are parasitized.

Our cutworms are the larvae of a noctuid moth which may be seen in March or the early part of April flitting over the flowers in the twilight when we are to have what we term a cutworm season.

In a very short time after the cutworms begin to appear, and trouble follows. When we see the moth flying it is time to prepare for combat with the worms. The more weeds or alfalfa we have around us the more we are troubled with worms.

One orange grower told me that he thought he would not grow peas any more as a cover crop because the worms breed in the peas.

If the cover crop of whatever kind, peas, vetch or weeds are plowed under before April first, and all surrounding weeds disposed of at the same time I will venture the assertion that all worm troubles will be nominal. I have never yet seen cutworms trouble an orchard unless there were weeds or alfalfa for them to breed on.

When cutworms are in an orchard in numbers the effective way to avoid damage is to clean away under the trees and trim off the branches so that the cutworms cannot reach them from the ground and in that way get into the trees; then band the trees with either tree tanglefoot or with tanglefoot fly paper; we have tested this method and it works well.

We have been troubled with the pests this season and they were also much in evidence here two years ago. Heretofore they have appeared only once in four years.

A great deal has been said about the hot weather killing off the cutworms. If a few of the worms start out to travel and get caught in the hot sun-light and cannot get into the shade quickly the heat will kill them; but nature has given them understanding or intuition enough so that when it is going to be hot the worms get into the shade or into the earth, where they are safe until nightfall, their natural time for feeding, when they may be found in full force getting their meals.

They have their natural enemies however; one a large, black beetle called the Searcher, Calosoma scrutator; this enemy both in the larva and in the beetle stage eat cutworms voraciously. I have known this beetle to be confounded with the Pinacate-bug; not because it resembles the Calosoma, but simply because it is a black bug nearly the same size.

Our most effectual enemy of the cutworm is an ordinary sized fly much resembling the house fly and bears the name Frontina frenchii. And in breeding the worms out sometimes I have gotten all moths and sometimes all flies. These flies lay their eggs on the worms as they are travelling. and after the worms go into the pupae stage the egg of the fly hatches out a maggot which eats the pupa and then in its turn the maggot pupates and from this pupa emerges a fly.

It is from the effect of this fly that we may attribute our immunity from cutworms in what we term off years, as often from sixty to ninety per cent. of the worms are parasitized by these flies.—S. A. Fease.

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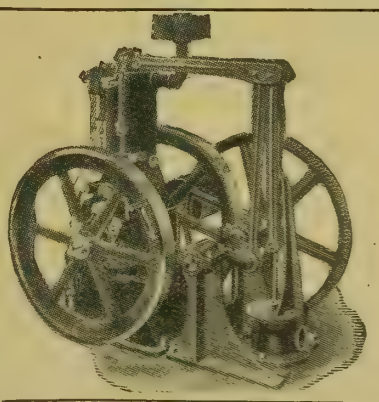

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California Horticulturally

A NEW ALMOND.

THE worst feature of the almond is its uncertainty as a bearer. If we could produce an almond that would give crops with any degree of certainty, there would be more money in it than in any other fruit. The almond is a very early bloomer, being the first of any of the fruit trees to come out in blossom. It is, therefore, subject to frost, to heavy rains which wash the pollen out of the blooms, it is subject to high winds and all the vicissitudes which come in the late winter months. Escaping these, it is more subject to Red spider than any other of our orchard trees, and altogether cannot be depended upon for crops and too often it is found unprofitable. What is wanted is a late blooming, spider-resistant almond and one possessed of the good qualities of those now grown. We note that C. F. Bantham, of Chico, claims to have produced a superior almond that seems to cover these requirements, and which he has named the "Bantham Everbearing." This nut seems to have been a chance seedling. The past two seasons have been very short on almonds, yet Mr. Bantham claims that his trees of this variety were loaded, yielding an average of thirty-nine pounds to the tree. It is sincerely to be hoped that this tree is all that is claimed for it.

PLANT LICE ON CABBAGES.

Now is the season when the whole of the aphis family is doing its greatest destruction and its members appear in great masses on all forms of tender vegetation. The vegetable gardener especially is suffering from their depredations, and the cabbage is perhaps the greatest victim of their destructive work. Fortunately this insect is one of the easiest handled. It is soft-bodied, very susceptible to changes of temperature, washed off by rains or devoured by lady-birds and other insects. Where they are doing damage to young plants, wood ashes dusted over the plants from a cheese cloth sack will destroy all that are touched; the kerosene emulsion is also one of the best remedies and a wash of whale oil soap, one pound to six gallons of water, applied hot will check them on any plants which they attack.

SERIOUS LABOR SHORTAGE.

The following statement is sent out from Porterville, Tulare county:

"Hundreds of tons of farm produce in this section are being burned by farmers in order to clear the ground as there is no available help to harvest the crops."

It seems impossible that this can be true, but it is true that there will be heavy losses due to the fact that sufficient help cannot be secured to save the crops this season. Conditions are even worse than last season, and with the great and increasing demand for labor in the cities, and the constant drain on the country, there is little hope for relief for the farmer this season at least. He will have to do all the work he can with the aid of his family, and trust to providence for the rest.

AN ENEMY TO BERMUDA GRASS.

Some one has discovered a grass which is so hardy that it will run out Bermuda grass when planted among it. We opine that the next thing which will be wanted will be something to kill this out, for anything that can run out Bermuda must be worse than Bermuda, and we have always been of the opinion that, except Johnson grass, this was the toughest thing to get rid of, when once established, in the whole vegetable kingdom. We shall watch the other fellow's experiment with much interest, but for ourself we shall let it alone.

APHIS ON HOUSE PLANTS.

Plant lice on house plants, or in the garden, on a small scale, can be handled with tobacco smoke, which is fatal to them. Get some tobacco stems, which can be secured from most seed stores or tobacco factories, and make a smudge of them in an air-tight room or receptacle. Another remedy is bi-sulphide of carbon, which can be had at any drug store. Put the plant in or under an air-tight box, an old can will do for small plants. Pour about two teaspoonfuls of the fluid into a saucer, cover the plant with the box or can, with the saucer and contents inside, bank a little soil aroung the bottom of the can to make it air-tight, as the gas is heavier than the air and will run out, if there is means for its escape, and leave it for half to three-quarters of an hour. Care must be taken in handling this stuff, as it is very inflammable and will explode if brought near a fire. So the operator will do well to lay his cigar aside while using it and not apply it by lamp light.

POTATO BLIGHT.

For several years past there has been much complaint of potato blight, and in some sections the disease has been so serious as to materially affect the output. Like very many of our blights, this disease is caused by a parasitic fungus, the spores of which are on the seed potatoes usually and ready to spread to the whole plant as soon as it begins to grow. Care should be taken, as far as possible, not to plant seed from an infected section. If there is any suspicion, the seed potatoes should be dipped in a solution of sulphate of copper, treated very much as seed wheat is treated for smut, or a solution of formaldehyde, a pint of formaldhyde in thirty gallons of water may be used. Soak the seed potatoes in this mixture for two hours. If there is any fear of blight, spray the young vines as soon as they appear with the Bordeaux mixture, and repeat later in the season.

A BOOM IN WHEAT.

In nearly all parts of the world where wheat is grown the crop this season is very short, and most of the exporting countries will have all they can do to supply the home demand. In Russia there is suffering and actual starvation in the wheat sections; in Argentina the crop is reported as very light, almost a failure, and like reports are received from all parts. In consequence there is already a boom in wheat prices, and those of our California farmers who have wheat for sale this year will do well. Unfortunately, we are in a like condition with other wheat growing sections.

"Are we alone?" asked one of the villains of the piece of his brother conspirator.

"No, guv'nor," came a voice from the gallery, "but you will be tomorrow night."—London Tatler.

With the Citrus Growers

CAPILLARITY.

WE HAVE been asked to explain the action which causes "tubes to form in the soil" called Capillary tubes which let the water out of the ground during evaporation.

There are no so-called "tubes" formed in the soil. The idea has become general perhaps through the explanation given of the action of water in the soil. It is best explained by the illustration afforded by the action of water in tubes. This action is due to the same force that makes things fall to the ground. The real force is gravitation, but in the case of the water in the tube (and the soil) it appears to be the opposite, but this is because of the difference in form and density of the different elements. The force which is exerted by gravity in this case is tension. For instance, when we blow a soap bubble and leave it on the bowl of the pipe and take the stem out of the mouth, leaving a free passage for the air from the inside of the bubble out through the stem of the pipe, the bubble will gradually grow smaller and finally form a straight diaphram over the mouth of the pipe and, at the same time, draw up a large drop of water that hangs at its lower end. Now if it were possible to have a marble or any substance inserted in the bubble without breaking the thin film of soapy water, it would squeeze the marble with a certain amount of force. If the substance were irregular, the bubble would become the same irregular shape. But it is not necessary to insert the marble. Touch it with a drop of the liquid and it will immediately travel around and cover the entire surface by the same force that draws the bubble back into the pipe. Touch the marble with another drop and it will travel around quickly to distribute itself over the surface and increase the thickness of the film. Repeat this often enough and when the amount of liquid becomes so large that the gravitation power of the earth more than equals that of the marble, a portion of the liquid will drop off. To illustrate how this acts, take two corks of equal size an weight and place them in a tub of water. They will be attracted to each other with equal force. Place a smaller cork near one of them and they commence to travel toward each other at once, the smaller one traveling the fastest that they bump together. In the case of the over-wet marble the earth pulls the extra water away from it. The amount of water is not properly proportioned. The water clings to the marble beacuse it is easily separated into small particles and each individual particle is attracted. Now if another marble is allowed to touch the over-wet one the fluid will at once travel over its surface till it is equally as wet provided the earth has the same pull at both. For this to be so, both ma bles must be on a level. If one is above the other the earth pulls hardest on the under one, consequently it is the wetest. Now place several marbles in a heap and wet the under ones and the moisture will travel from one to the other till they are all wet, but the lower ones will be the wetest. There will be a connecting point where the marbles touch at which place the film of water is the thickest. Now separate the marbles slightly and the film at that point will decrease in area and less water will travel from the lower ones to those above. Now instead of using marbles take coarse shot and the films of water at the points of contact will be broader than in the case of the marbles. the relative sizes being considered. Make the shot small enough and the films of water will increase in thickness at the points of contact till all the spaces are filled up to a height where the pull from the center of the earth equals the tension. Now a glass tube will show the appearance of this action plainly. Place one open at both ends, in a cup of water and it will run up the sides a short distance. Use a smaller tube and the water will rise a little higher. That is partly because there is not so much water to raise in the last case. This serves to illustrate the so-called tube action of the soil, but the spaces in the soil through which water travels from one particle to another are no more tubes than a promiscuous pile of lumber is a house.

The practical application of the action of water applied to the marbles and different sized shot and the glass tubes is this: If the soil is allowed to remain packed, which is a condition rendered when the particles are very close together, the moisture will travel form one to the other more quickly than when placed slightly apart. When it is desired to bring the moisture close to the surface, packing to bring the particles close together will accomplish the end. If it is desired to shut off and stop the passage of the moisture from one particle to another, separate them by cultivation.

The White Fly in California

The dreaded White Fly (Aleyrodes citri) so long a serious pest in Florida has invaded California, and so far as can be learned, has been here for the past two or three years.

So far as known it is yet confined to about 1000 trees in or near the city of Marysville, Yuba county. These trees are badly infested.

E. K. Carnes, Deputy Horticultural Commissioner, has made a thorough investigation and reports that without question the problem is before us of eradicating this greatest pest of the citrus industry.

It is to be hoped that most energetic action on the part of State and County authorities will wipe it out before it gains a stronger foothold.

While the present point of infestation is six hundred miles from the greater citrus producing sections of the State, the gravity of the situation demands instant action.

FEED THE TREES.

Experienced growers know that orange and lemon trees are gross feeders, and hence respond quickly to an application of plant food to the soil. In California, and for that matter in the arid regions quite generally, the soil is naturally rich, and when the tree is planted on virgin ground, it will do well without any application of fertilizer for the first few years; after that, however, some recognition must be given the orchard in this regard. Its extent and character is obviously a matter of local conditions, and act in compliance with the best practice of the successful and experienced grower in his locality. In sections where the soil is shallow it is expedient to apply a fertilizer every year from the time the orchard is planted. In the rich soils of California, it has been found that nearly all the subsidiary elements of plant food are present, and hence only the four leading elements must be supplied, viz., nitrogen, phosphoric acid and potash, and in rare cases lime. These must be replaced in the soil of orchards subject to constant cropping. The intelligent grower, therefore, will be quite apt to see to it that his trees do not suffer for the want of nitrogen, phosphoric acid and potash, because these are the elements which the crop annually draws from the ground, and which must be replaced.

The experience of orange growers indicates that the quality and quantity of the fruit may be very largely controlled by fertilization, and as oranges are purchased entirely upon their appearance and quality, this becomes a very important consideration throughout this region. Fertilization should be carried on with but one object viz., to enhance quality and quantity of fruit.

Touching kinds of fertilizers and values of stable manure, a report to the Riverside Horticultural Club on this subject contains the following suggestive paragraph:

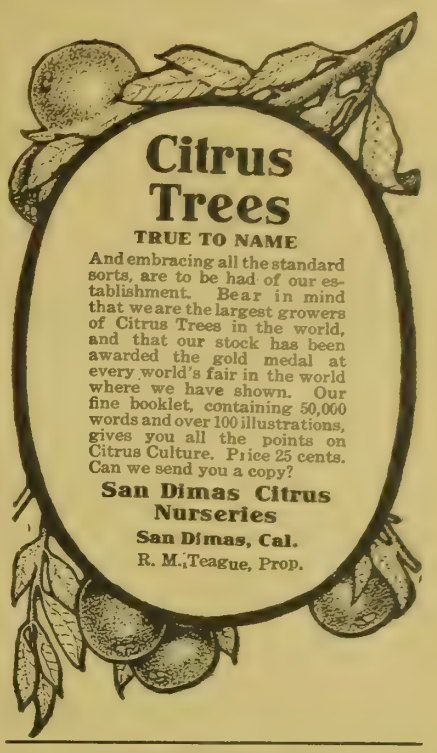
"The question of fertilizers for the orange orchard has in some form been almost continuously before the club. What kind of fertilizers are the best, and how and when they should be put on? are questions often asked, but never as yet answered to the satisfaction of all. It is known that the different commercial fertilizers on the market are good, and when freely applied they generally give satisfactory results. But growers believe that they are too expensive, and that by buying the chemicals and doing their own mixing, or by applying the chemicals in suitable quantity to the soil without mixing, they may reduce the expense about one-half. There is a growing conviction among orchardists that stable manure is one of the most valuable fertilizers, when it can be secured at reasonable figures. One small Navel orchard in Riverside, fifteen years old, a part of which has been fertilized exclusively with stable manure, has borne regularly, and the fruit has been fully up to the average standard of quality."—From Teague's Citrus Fruits.

"Tried your new auto yet?"

"Yep. Had a fine ride."

"Go fast?"

"Not so fast as the cop. That's where the fine came in."—Philadelphia Public Ledger.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THE WHITE FLY.

The unwelcome news that California has been invaded by the Florida White fly is verified. It has appeared in one or more counties and is creating consternation among citrus growers.

The fact that so little is known about its character—except that it is a most dangerous and destructive enemy to citrus trees, as well as several other kinds of plants,—makes its eradication the more difficult. Its ravages are a bad as the scale and it must be handled promptly and severely to get rid of it. Fumigation is tne only remedy so far known. No parasite has been discovered that will check its ravages or destroy it.

If it were possible the State ought to cut down and burn every infested tree and plant, and pay the owners for the trees so destroyed. One thing is certain, California citrus growers are confronted by an enemy which must be exterminated at once or the groves in the State will perish in an incredibly short period.

THAT ROAD COMMISSION.

The Supervisors of Los Angeles county will have a good-roads commission to appoint within a short time. Upon the character of the members of this commission will rest the fate of the bonds asked from the people.

If the Supervisors appoint a commission composed of men who are politicians only, and know nothing about road making, the bonds will not be voted. They ought not to be voted. If on the contrary the selection of the commission is a wise one, if the members are practical, up-to-date road builders with characters well established for honesty, the people will, we believe, vote the bonds asked and Los Angeles county will enter upon the inauguration of a system of good roads which will make the county famous. We need good roads. They are of the first importance to the county, but the people must be assured that practical, honest men, not petty politicians are to handle the $3,000,000 asked, and that the County is to receive an equivalent, dollar for dollar, in the roads that are to be built.

The success of tne vote on the bonds to build the roads is up to the Supervisors. It depends entirely upon the complexion of the members appointed on the good-roads commission. If the commission is unsatisfactory to the people the bonds must be defeated.

THE PLODDING MAN WINS.

The secret of success, in whatever vocation, is tenacity. The man who undertakes a proposition and falters is lost. Conversely the man who sticks to whatever he elects to follow through adversity is the winner in the long run. Of no occupation is this truer than of agriculture. The farmer, fruit grower, poultry raiser and stock breeder are beset with drawbacks. A dozen unfriendly conditions surround him from the hour he embarks in business to the end of his career. He has troubles all the time, but he has corresponding pleasures in overcoming obstacles and winning success at last.

We have in mind, as an example, of this character, a young farmer near Glendale. A few years ago he bought the tract of land on which he now has a comfortable home, settled down to work it and built a home thereon and a competence. He struggled along amid adversity, bad conditions and worse health. At times he was discouraged but he never flinched. After several years of this sort of life the tide in his affairs took a turn for the better and today we are told by one of the prominent citizens of his town, that this man is worth $20,000. This fortune has been builded out of reverses, is substantial and but the beginning of wealth in the years to come. From this on his way will be easier and his profits larger from year to year.

It is the old story of work and wait. The man who works and waits is the man who wins provided he keeps pace with the age in which he lives. The instance cited is one of thousands of like kind. Rarely does an industrious, progressive farmer fail. It is the man who tires of work and reverses who never accomplishes anything; the man without glue in him to stick to one calling is the man to whom wealth never comes. To struggle with the "ups and downs" of business and overcome the "downs" is the right way and the way to succeed finally. In fact, it is the only way. If the Cultivator had any advice to offer the struggling young man in the field of agriculture to day, it would be to hold fast, improve with the times and never falter. The dark days are the days of experience and experience is the mother of all future results.

HOW SHALL WE TEACH AGRICULTURE?

The coming to California, in July, of several thousand school teachers ought to be the occasion for disseminating a great deal of practical educational thought. In this number will be men and women from every State in the Union, representing the varied conditions of climate and agriculture throughout the United States. Naturally among this number too, there will be representatives of great agricultural institutions, and these professors of scientific farming ought to be able, and will be able, to impart useful instruction as to the best methods of teaching agriculture in the common schools.

The old method the farmer adopted of giving to his son and daughter the information, he, himself, possessed regarding the farm, its live stock, its orchard, its field crops and its permanent improvements, was that of example. It was the simple process of allowing instruction to "filter through" the mind. This was the method used on the father, and of course, he was not to be blamed because he did not understand any other process of imparting practical, farm knowledge. The methods adopted in teaching agriculture to young people in this day are new in themselves. It has been but a few years since the National Committee on Scientific Agricultural Teaching made its first report, but since that date wonderful strides have been made all along the line, until at the present time, we are confronted by an entirely new process by which the theoretical is eradicated, and the practical is made to predomenate. The time has come when young men are seeking to know the answer to the question: "How shall we teach Agriculture?" We remember recently to have heard a learned professor from the State University make an observation like this:

"It is impractical to educate all the boys and girls of the country to be doctors, lawyers, preachers and teachers, as we have been doing in the years that are gone, because not one boy in a hundrd can hope for a successful professional career." This was a perfectly honest statement, as borne out by statistics; the fact is, that less than five per cent. of the boys in the common schools ever reach the high school; only about one per cent. reach college, and less than that, the University. The importance of the question then, "How Shall We Teach Agriculture?" is one of the most live and interesting of the educational questions before the country. While considering what to teach, the materials, views and information the school teacher possesses, are of great importance.

Teachers Fitly Qualified.

There is no class of persons more fitly qualified, if they possess the proper information to promulgate agricultural instruction than the teachers in our common schools. More than fifty per cent of these, we may safely estimate, have been reared on the farm, or on the ranch. They have absorbed many farm views and naturally their powers of observation are trained along agricultural lines. Such teachers, themselves, require but the physical implements to teach agriculture in its most scientific and understanable form; practical experience is a teacher which in all ages has accomplished the practical results in life. Scientific facts, when clearly and simply stated, and supplemented by practical explanations, are readily understood by children of even tender age. The children then become educators of the parents; they carry with them suggestions which, made to the fathers and mothers, result in unbounded good to the life of the farm. The country school is the vehicle for inculcating scientific principles in farming. The teachers should be supplied with tools by which to make practical demonstration, to the end that scientific knowledge may take useful form and be of lasting benefit. Those teachers who only use the text book are theorists and their instruction practically avails nothing. There are special works which might be adopted in the country schools; towit, the school garden, in which the culture of plants and flowers naturally leads up to instruction as to the methods eradicating the pests which infest those plants and flowers. The window garden for the country school is a modified feature of this system; agricultural research is a feature which might profitably be combined with school composition work and in itself presents a valuable course of topical reading. The supply of reference books needed for starting an Agricultural library is so inexpensive as to debar no school from obtaining it. Walks afield with classes in spring time, or in harvest, are most instructive; visits to stock farms, hot houses, dairies, orchards, poultry yards and nurseries are most useful and afford pleasure with recreation.

Basis of Higher Education,

When our Boards of Education undertake this practical work, in some of its several forms, our common schools will become as they should be, the basis of our higher education. The child and the teacher will get a deeper insight into things that make up the human life, than has heretofore been obtained in the common life. The child will recognize that "going to school" is indeed the preparation for a useful existance. Farming will present itself as a thing of system and reason, and enlist the active interest of every child who is an attendant thereat. We believe that every common school, and every normal school in the country, should embrace a curriculum of the best methods of teaching agriculture, as well as of supplying them with material to demonstrate fundamental principles. State legislatures should provide the necessary equipment for the normal schools to render their efforts in elementary agricultural instructions effective and thorough. Our Boards of Education throughout the land should wake up to the importance of putting into operation every teaching fact now developed, or being developed, in the agricultural field, to the end that we may produce a class of citizens out of our common schools, and our normal schools, thorough in every department of the field of agricultural education. It is up to such great teachers as David Starr Jordan, Benjamin Ide Wheeler, and Edward J. Wickson, all of California, to "lead out" along this line and show our eastern educators the value of such instruction as that of which we write.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

McKim Bros. at Imperial will ship 22 carloads of hogs to market this year.

State Dairy Inspector Starr predicts a great dairy future for Imperial Valley.

The annual round up of cattle from all parts of Antelope Valley will take place next week.

Grain crops in the Antelope Valley are reported by the Gazette to be in exceedingly fine condition.

Celery Growers' Association of Southern California changed its by-laws at its meeting on June 3rd.

Salton Sea is now 205 feet at its surface below sea level, while at its bottom is known to be 287 feet below sea level.

The warm weather of the desert is reducing the Salton Sea; one paper states a reduction of one foot in three weeks.

The Standard says: "The new hog crop is beginning to ripen and will be harvested within the next two or three weeks."

W. W. Howard, the white leghorn man, has purchased real estate at San Jacinto for the extension of his poultry yards.

Lancaster is becoming quite a poultry shipping point. Several new ranches have been started within the past two months.

Palm Avenue school at Rivesride is "getting back to the soil" and the youngsters attending there are having a thorough drill in garden work.

Grain in the Imperial Valley is reported not so heavy as anticipated earlier, but a very fine crop. Barley will be about one-third of last year's yield.

A Santa Barbara experimenter claims to be able to evaporate eggs which will be later put upon the market, more particularly for use in the army.

Friends of the new county of San Antonio are working hard to make a new county out of the eastern Los Angeles and western San Bernardino counties.

A large cabbage shipper, Thomas Strain of Fullerton, is being sued to compel the completion of contract. The claim is made that he purchased stock of the grower which he maintains he was simply handling on commission.

The Colorado river continues to rise and great fear is expressed that the levee may not hold. The Southern Pacific has a patrol at danger points and every effort will be made to save the work which was put in at such vast expense last year.

The stockmen of San Diego county are requested to meet at Steiner Hall, in Escondido, on Thursday, June 20, 1907, for the purpose of effecting a permanent organization of the stockmen of the county, and to take steps to eradicate the Texas fever or tick disease.—Escondido Times.

The work of getting the Yucaipe Valley ready for settlers is progressing rapidly. Surveyors are at work subdividing the huge tract into small farms and platting the same. Alfalfa is to be sowed over a large area, and trees set out on several tracts. The land is to be put under irrigation whenever needed by means of wells and pumps.

HORTICULTURE.

Pomona reports a setting of a big crop of oranges.

Work at the canning of blackberries is now on at Pomona cannery.

Berrydale, Los Angeles county, is shipping 40 to 50 crates of strawberries daily.

Logan berries are ripe at Hemet; the quality is fine and the crop a large one.

Navels from Arlington Heights are all shipped; other varieties will soon be off the trees.

S. M. Bixby, of Imperial, has sold $30 worth of dewberries from one-twenty-fifth of an acre.

A patent orange-wrapping machine has been installed at the Spruance packing-house San Gabriel.

Redlands has shipped its last navels. The aggregate for the season is about 3150 cars for the season.

Santa Ana packing-houses are still handling a few oranges but the season's output is practically all in.

Apricots are almost ready to pick at Hemet, the season commencing about a month earlier than last year.

The cantaloupe, cucumber and squash shippers at Brawley are up to their ears in fruit shipping these days.

From Imperial there will be shipped about 12 carloads of early table grapes which will aggregate about 180 tons.

Manager Brown of the San Joaquin Ranch near Santa Ana has just finished the planting of 60 acres of oranges.

The San Fernando Press reports the stealing of oranges conducted in that section to be almost unbearable by the orchardists.

One vineyardist in Imperial Valley has sold his grape crop for this year for $125 per acre, and this only a two-year-old vineyard.

Highgrove is quite puffed up over the fact that some of her Cerrito brand of navels sold last week in New York for $4.65 per box.

The Imperial Standard says that the returns from the grape crop within a radius of four miles of Imperial will aggregate $500,000.

A convention of forest rangers of Southern California was held at San Bernardino recently; about 40 rangers were in attendance.

The San Joaquin Fruit Co., at Santa Ana, is improving its ranch property by the extension of pipe lines for more economical irrigation.

The Submarine of the Coachella valley maintains that the date experimental planting at the government station has already proved date growing to be a success.

Thermal will ship about the same number of cantaloupes as she did last year, the acreage is smaller but a better crop obtains; about 75 carloads will be the output.

The warm weather has decreased the pest of cutworms in most sections of Southern California and ended the fear that possibly the whole orange crop might be wiped out.

Redlands papers complain of shipments of purple scale on fruit which was received at the marmalade factory; shipments from all infested sections have been prohibited.

Northern California

AGRICULTURE.

Fresno county has had its visitation of grasshoppers.

Brownsville, Yuba county is to have a new creamery.

An experimental planting of tobacco is being made at Florin.

The Burdell creamery near Point Reyes was destroyed by fire recently.

Wheatland hay and grain growers have finished their harvesting of a fine crop.

A large woolen mill has been established at Marysville and is being run to its limit.

Pajaro appeals for farm help to assist in the gathering of the crops of the Pajaro Valley.

Prof. Fowler of Berkeley will conduct a Farmers' Institute at Alpaugh on June 21 and 22.

The Tulare Grange held a special meeting recently which was addressed by State Master Griffith.

Wheatland reports a very heavy crop of hops with scarcely a vine in the field not flourishing.

Preparations are being made for a fair of Placer county products to be held in Rocklin in September.

The wool and "scouring" plant at Marysville is making Marysville a great woolen shipping center.

Secretary Filcher of the State fair is making strenuous efforts for a "for sure" Agricultural fair this year.

Marysville is experimenting in the planting of tobacco, and to this writing the experiment promises well.

The State Forester is investigating a grain fire near Orangeville which was started by picnickers. Arrests may follow.

A new irrigation canal supplying Glenn and Colusa counties is 50 miles long of 60-foot ditch and 24 miles of 30-foot ditch.

A farmer near Orangeville demanded and received $56.25 for damage to his crops caused by picnickers setting his field on fire.

The Roberts ditch near Colusa is again carrying water for irrigation which is increasing the value of real estate under the ditch.

One of the improvements in Sequoia Park, East of Fresno county, is the completion of a fine road-way in the "Giant Forest" road.

A new creamery is being built at Meridian, Sutter county, Cal., by Messers. D. L. W. Hoffman, M. A. Girdner and W. T. Mitchell.

The trustees of reclamation dis- No. 70 in Sutter county are putting in additional dredgers for new levees, and are repairing the old ones.

The Central Irrigation Co. having lands in Colusa county are advertising in the Eastern newspapers for settlers for their newly opened lands.

A scheme is on foot by which quantities of water will be pumped from Tulare lake to reclaim the barren plains along the western slope of the valley.

A cool and invigorating sea breeze is given credit for the saving of the grain and hay crops in Yolo county. It was feared earlier that the drought would cause a great shrinkage in the yield which is now found will be much better than anticipated.

HORTICULTURE.

Tehama reports good crops of almonds.

Newcastle reports a good season in cherries.

Most of the breaks in the leeves of rivers have been repaired.

Olives promise to be the heaviest crop ever in the Maywood colony.

Tehama claims she will produce 300 tons of dried prunes this season.

Reports as to peach blight are that the attack is much lighter than last year.

A bank has begun suit to foreclose the mortgage of the Geyserville cannery.

The highest estimate for the California prune crop this year is 65,000,000 pounds.

The Lindsay Gazette chronicles the planting of many Valencia oranges this season.

Santa Clara Valley prune growers are being offered four cents per pound for all sizes.

San Joaquin peach growers are being offered ten cents per pound for cured peaches.

Hearldsburg has an association of "boosters" whose aim is to encourage clean roadways.

Strawberry growers of Watsonville have made a fine clean up of this year's output.

Cherries which have been sold in the East brought excellent returns to the growers this year.

One hundred dollars per ton is being offered for the coming crop of raisins. This is the highest price for many years.

A 15 acre orange orchard near Porterville sold recently for $24,000. This is the top notch for orange orchards in that section.

The Porterville Enterprise says this will be as fine a year for fruit growers of Tulare county as they have ever experienced.

The prune pitting machine which has been invented at Santa Clara will take the pit from the pulp with very little if any waste.

The first carload of California deciduous fruits to go by freight this season left Vacaville Thursday, May 23, six days later than last year.

The pumps at districts No. 556 and 407 near Isleton have run the water from the overflow, so that now it is anticipated late crops will be given on those lands.

The first carload of deciduous fruits out of Vacaville this year contained 1,585 boxes of cherries, 255 cars of apricots, and one box of peaches, the first of the season.

Cora E. Erkert near Cloverdale has begun suit against a number of farmers for damage caused by constructing a dam, which cut her off from the water of the Russian river.

The farmers in Salinas Valley are taking steps to secure Federal aid in irrigating their lands. A mass meeting is to be called for sometime during the present month.

The farmers near Biggs are paying nearly twice as much as last year for help, and find that even at that some of their crops will be wasted for want of sufficient help.

PER 2 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

Buy the World's Famous Egg Food No. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Haphazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultry men who have used these machines have supreme confidence in their ability to hatch and breed. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis World's Fair for the greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 5th, 1904—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. Filcher, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

Petaluma Incubator Co.

Main Office and Factory, Petaluma, Cal., Box F.
Los Angeles, 505 South Main Street.
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Lincoln Avenue Poultry Yards

Successors to
Capt. E. Pryce Mitchell

Mitchell's White Leghorns

Exclusively

Carl C. Curtis, Owner — Lincoln Ave. and Ventura St., Pasadena, Cal.

Circular for the Asking — (Altadena Cars)

200-250 Egg Fowls | **WHITE WYANDOTTES** | Always Win

Eggs and Stock Half Price for May

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CAPITOL AVENUE POULTRY FARM

A. L. R. MANTZ — Rural 21, Box 98k — SAN JOSE, CAL.

Beef, Blood and Bone Will Make Your Hens Lay

This is not a medicine but a high grade nitrogenous food. Write for free booklet, "How to make Hens Lay." Our Poultry Foods are sold by all local dealers and manufactured solely by

The Pacific Guano and Fertilizer Co.

Also Pioneer Manufacturers of High Grade Fertilizers. Write for our free booklet, "Farmer's Friend." Valuable to all farmers and ranchers. Indiana and Yolo Sts., San Francisco, Cal.

Bemis Plymouth Rocks

Barred and White

Prizes Won at Alameda County Poultry Association Show, Oakland, 1907—22 Regular Prizes and 3 Silver Cups. Can furnish best birds and eggs at reasonable prices. No incubators lots furnished

Mrs. Florence E. Bemis, 1757 19th Ave., Oakland, Cal.

Black Minorcas Exclusively

Our Minorcas excel in size and egg production. All prizes at the late Los Angeles Show were awarded our birds. Stock and eggs for sale. Send for our new illustrated catalogue.

Perham & Wheeler, R. F. D. No. 123, Lordsburg, Cal.

Columbian Wyandottes

PEN No. 1 contains four imported females and cockerel, all very large, strong black hackles and white bodies. Sure to breed winners. Eggs $5.00 per 15 straight.

THEY ARE IT

PEN No. 2 — Headed by First Prize Cock and winner of National Columbian Special, mated to six A1 females. Eggs $3.00 per 15 straight.

FRANK J. IRONMONGER — Hollywood, Cal.

Profit in the Poultry Yard

WHITE FACED BLACK SPANISH.

THE White Faced Black Spanish represent one of the oldest breeds of the Mediterranean class, and it is to be regretted that such an old breed with so good qualities has so little known history. In looking over some of the best works published on poultry we find very little devoted to the Spanish. Their real origin seems to be somewhat a doubt, some claiming that they can be traced back more than 100 years. The writer has from Mrs. W. H. O'Connor, who breeds

First Prize White Faced Black Spanish Pullet, Los Angeles, 1907
Exhibited by Mrs. W. H. O'Connor, Dolgeville

them, that her parents bred them when she was a child and that she has always been actively engaged since she was old enough to take any interest in poultry. That they were bred about the same then as now.

History.

Mr. Lewis Wright, who remembers the old Black Spanish, says that they were bred in England to a somewhat rough or "cauliflower" type of face, but that a second introduction of birds with smaller and smoother faces came from Holland, precisely that district of Europe which had been most overrun by the Spanish armies under the Duke of Alva. We believe that we are safe in saying that the Spanish were originally from Spain, and that they and the Minorca at one time were closely related.

The Spanish as now bred with thin, large, white face show quite a contrast from the Minorca. Aside from face, however, there are many points that resemble. They are of the non-sitting class and lay an extra large, white-shelled egg. In one respect they differ from many of our fowls, in that they lay either winter or summer in this climate of the Pacific Coast.

Standard Description.

Male.—The face "long, deep, smooth, free from wrinkles, rising well over the eyes in an arched form, reaching toward back of head and to base of beak, covering the cheeks and joining the wattle and ear lobes; the greater the extent of surface the better."

Comb should be single, of medium size, straight and upright, firm and even on the head, deeply and evenly serrated, having five points.

Back, of medium length and width; body, rather long; wings, large and well folded; tail, large, expanded, and main tail feathers carried at an angle of 45 degrees. Weight: Cocks 8 lbs, cockerels 6½ lbs.

Description of female: face similar to that of male but smaller. Comb: Single, large, drooping to one side, evenly serrated, having five points. Back, of medium length. Body, of medium width, rather long. Tail, carried at an angle of forty-five degrees. Weight of hens, 6½ pounds, pullets 5½ pounds.

Colors of male and female, plumage black, free from purple bars; shanks and toes, blue or leaden blue.

AROUND THE YARDS.

Mrs. S. D. A., Arlington, writes regarding fleas that are bothering her flocks. They attack both old and young—fastening themselves to their heads—and asking some remedy.

This flea at one time caused a great deal of trouble to poultry raisers in California, but until last fall or late summer had not been troublesome for some time. It then made its appearance in many flocks and caused considerable trouble, and no end of worry.

For relief to birds afflicted a good application is carbolic salve, or lard and sulphur. But you will be annoyed until you rid your hens of them. This can be done by spraying the houses with an immersion of distillate and crude carbolic acid. Or a solution of commercial sulphuric acid about six tablespoonfuls to one gallon of water. Sprinkled well in houses and yards about twice or

First Prize White Faced Black Spanish Cockerel
Exhibited by Mrs. W. H. O'Connor, Dolgeville

three times a week, for two or three weeks. Care must be taken to keep it from the clothes and hands.

To Good to Them.

Will you give a good remedy for diseased liver in poultry. Some of my largest turkeys have been dying and, on examination, found yellow blotches on the liver.—A Subscriber.

The trouble with your turkeys is you have been overfeeding them and not giving them enough exercise. If you keep too much rich food before them they will eat more than is required for health and growth, and they refuse to exercise, thus causing liver complaint. Keep them at work, and in case you have trouble give a liver pill and don't feed so heavy.

Turkey Facts.

Always feed on clean surfaces.

Turkeys cannot stand dampness.

Filth is especially dangerous to all young stock.

Save the earliest and best of young stock for breeders.

The plumpest bodies are found in the short-legged fowls.

It is advisable to breed from choice old hens as long as they live.

As a rule, medium-weight turkeys sell best—especially around the holidays.

Lice cause fully nine-tenths of the mortality among the young.

Yearling breeding stock, as a rule, do not produce strong stock.

While the young turkey is tender, the old ones are very hardy, and do not need any artificial warmth in winter.

Turkeys thrive better in an open shed with a high roost than they do in a closed house.

We recently had the pleasure of a visit to the yards of a lady breeder who had a system in poultry breeding the same as she did with her housework. One thing we liked was the plan of purifying the soil in her pens. She had two or three extra pens and in these spaded up the ground and sowed wheat. When the wheat was about four or five inches high she turned the fowls on it and sowed another yard, in this way she always had nice clean runs, to say nothing of the saving in green food.

Age has no effect whatever on the laying or paying quality of geese. The rule is that geese increase in prolificacy with years. They lay as many eggs twenty years old as they did when only two or three years old and the fertility of same is better. Of course, a proper keeping and feeding must have been practiced at all times. Fat geese are non-producers. A solid bran ration is detrimental to good results. A grass-run and liberty and a little oats at night during the winter season is best.

At this time of year many are tempted to sell their early hatched birds, because the prices are attractive. Our advice is not to sell the early hatched pullets as they will pay for themselves this fall and winter with eggs, besides, they will make better breeders.

If you have not already provided shade for your fowls and chicks, do so at once, as they must have protection from the sun. In many sections it is also necessary to have a windbreak, as the steady wind keeps them in an unsettled and restless condition.

If you have room near a stream or pond get some ducks. Get good stock or eggs from some reliable breeder and lay foundation for the coming season. There is money in ducks, and they are not subject to many of the diseases of poultry.

The danger of overfeeding is reduced to a minimum when all grain is thrown in litter of some sort. The fowls will be eager to scratch for it and in doing so they obtain the exercise that keeps them in a healthy, natural condition.

The best health promoter we know of is simply burned corn. Put the corn in a baking pan and put into a hot oven. Leave it there, stirring it frequently, until the grains are burned to a crisp black. The hens fight for it after having it fed to them a few times.

Some of our readers have addressed their letters to us without street number. We received them after a time, but all mail pertaining to poultry matters should be addressed care of the Cultivator Publishing Co., 115 North Broadway, Los Angeles. This will reach us without delay, and you will receive the desired information much sooner. Several inquiries were not received in time to answer last week.

"Don't you think that doctor comes oftener than he needs to?"

"How should I know what his needs are?"—Life.

PARTRIDGE WYANDOTTES.

The Cultivator believes in the good points of the various breeds of poultry being set forth by fanciers who have a love for the breed under discussion. And heretofore several articles have appeared. Below, Mr. L. E. Berkey gives his opinion of the Partridge Wyandotte. He is a warm friend of the beautiful bird and his article is well worth careful reading. Friends of other breeds are invited to set forth the good points in utility and beauty which their breed possesses.—Editor.

Too much cannot be said in favor of the Wyandottes' shape and beauty as well as their great utility points. I heartily endorse the good words that have appeared in your columns about the other varieties, yet I am glad to have this opportunity to mention a less known, but the most beautiful variety of all—the Partridges. I am sure it must be because the breed is deservedly popular that we see more illustrations of Wyandottes in our poultry press than any two or three other breeds.

Among the many varieties of this grand breed (no race suicide here—for it is the biggest family in poultrydom, and every one of these varieties have enthusiastic supporters,) none attract more attention at our shows than the Partridges. Their beauty never fails to attract. In the East they have become quite numerous, ranking next in numbers to the White and Buff varieties, but Partridges are less known on this Coast.

Description.

It is difficult to describe the Partridge accurately and yet briefly. To those who are acquainted with the Partridge Cochins, it is a simple matter, for we have in this variety simply a combination of Wyandotte size, shape, etc., with Partridge Cochin color.

To begin with, the male and female are not alike in color. The male should have a glossy black breast, thighs, fluff and tail, with red back, red hackle and saddle feathers striped or pencilled, with greenish black, dark gray under color and should be free from white in either surface or under color. The female should have a mahogany brown ground color with a very dark brown or brown black pencilling running around the feather conforming with shape of feather, except the hackle, which is similar to the male, and the tail should be dead black. The wing feathers are also black, but edged with brown; the pencilling on her body should be sharp and well-defined all over except the parts mentioned.

Originators.

The honor of originating this beautiful variety belongs to Ezra Cornell and a Mr. Brackenbury, of Ithica, New York, who co-operated in bringing out the Silver Pencilled Wyandotte also. About the same time Ed. Theim of Dennison, Iowa, also produced what has since been known as the western strain.

Cornell and Brackenbury used a Golden Wyandotte male with the Partridge Cochin female for their first cross. The next season they introduced Golden Pencilled Hamburg blood and the following season more Partridge Cochin blood. The western strain, I believe, claims a straight cross of the Golden Wyandotte and the Partridge Cochin. Mr. Robert Condee, of Los Angeles, also succeeded with this same cross and

Until the Chicks are over half grown, feed them dry

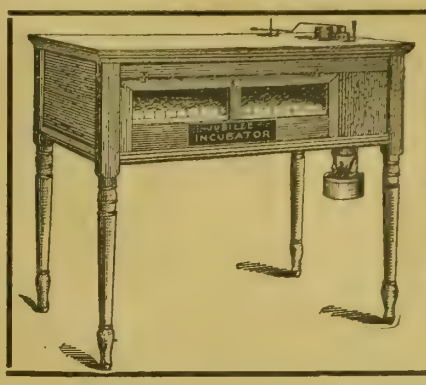
West Coast Chick Feed

Bright, pure, clean, made of the finest grains, seed, meat, etc., in just the right proportion to make a full rightly-balanced ration. They like it, too, and eat it up clean, for it contains no waste whatever. It keeps them healthy and will make them feather faster, grow faster and larger than will any other feed. They need nothing else until over half-grown. If your dealer does not keep it, and will not get it, send $3.35 for 100 pounds, freight prepaid by us to any point in California.

Manufactured by the

West Coast Stock Food Co.

818 San Fernando St. (Through to Alameda) Los Angeles, Cal.



Jubilee Incubators and Brooders

"The Business Machines of the World."

Ask those who ought to know! Ask business poultrymen! They will tell you that for business results in Incubating and Brooding

The Jubilee Stands Supreme

Send for New Catalogue A, just issued.

Jubilee Incubator Co., Sunnyvale, Cal.

SALES OF A. C. W.

Egg Food are increasing again; this reminds us that we can help those poultry raisers who are not getting the best results from their flocks. Use A. C. W. Egg Food and be convinced it is all we claim for it as the greatest Egg Producer on the market and entirely a natural product. No stimulants or drugs to make "dope fiends" of your hens and disaster to your bank account, but made of the best of mill food and animal matter in the exact proportions to make it palatable and produce eggs.

EGG FOOD A·C·W IT FILLS THE BILL

Keep the hens in the best of condition. Try a sack at all dealers or from our factory direct. We manufacture also Meat Meal, Blood Meal, Pearl Oyster Shell (the new kind), Bone Meal, etc.

The Agricultural Chemical Works

901-907 Macy Street - - Los Angeles, Cal.

Excelsior Mills

Excelsior Chick Food

Excelsior chick food is a perfectly balanced ration for your growing chicks. Will raise the largest possible per cent. of your baby chicks. All pure food, no shriveled grain and filler used in its manufacture. Absolutely clean and free from dust. No waste.

The Best Food on the Market

Ask for Excelsior. If your dealer cannot supply you write us. Circular free if you mention the Cultivator.

Del Monte Milling Co., 242 Central Ave., Los Angeles, Cal.

Beef Scraps

GUARANTEED ANALYSIS:

Protein.....65%
Fat.....8%

Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in these Beef Scraps.

Raw Bone

GUARANTEED ANALYSIS:

Protein.....25%
Phosphates.....45%

Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods

WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

White Wyandottes

That Are Trap Nested

Prize Winning, Large Egg Laying Strain
Won 19 Prizes in 1906

Mammoth Bronze Turkeys Lakenvelders

Stock For Sale. Write for Circular

Mrs. C. D. Hubbard, Box 282, San Fernando, Cal.

BOSTROM'S IMPROVED FARM LEVEL

Used for irrigation and drainage work. Cheapest and best level yet invented for farm use. Has the latest patented improvements in simplicity and usefulness. Can be operated by any one. Price including telescope tripod and target rod $12.50.

PALACE HARDWARE COMPANY,
456 Golden Gate Avenue, San Francisco.
COAST AGENTS.
Send for Circular.

Pasadena, Cal., May 22, 1906.
West Coast Stock Food Co.
818 San Fernando St.,
Los Angeles

Gentlemen: — I take great pleasure in recommending to gardeners your

KILLAMITE

I found it sure death to all plant insects without injury to the plants. I also use it in my poultry yards and know its use among poultry cannot be beaten.

Yours truly,
FRED ESTERWOLD,
Public Gardener and Breeder of Prize Winning Buff Rocks.

In sifting cans, 25c and 50c by mail, if your dealer doesn't keep it. For spraying in and about the poultry house **West Coast Lice Killer** can't be beaten.

AUCTION

20 Cows and Horses

Tuesday, June 11th
AT 10 A. M.

On my ranch three miles south-west of
SANTA ANA

17 Head of good Milk Cows, Jerseys and Durhams young and in good condition, fresh and coming fresh, large milkers, all good dairy and family cows.
1 Jersey Bull
1 Bay Mare 8 years old weight 1200 lbs. good work mare
1 Black Mare weight 1000 lbs.
Implements: 2 farm Wagons, spring Wagons, Buggy, Mower
2 Feather Beds, Pillows, Household Furniture, Etc., Etc.
I am quitting the dairy business and closing out my entire herd and will positively sell everything without reserve or limit.
Terms: 6 months time will be given with note and approved security Discount for cash.

DAVID MITCHELL, Owner.
Rhoades & Rhoades, Aucrs.
Office 730 South Spring St.

Bille's Gopher Poison

In a class by itself. They hunt it—it kills them. Two large bottles for $2.50 express prepaid by us, if your dealer doesn't keep it. Money refunded if not as represented. Circular with many testimonials. Made under Bille's patent by

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ESTABLISHED 1882
Business-trained, certified, degree faculty. Newest, finest, best-equipped building of its kind in Los Angeles. Catalog and calendar free if you mention the California Cultivator.

LUGO HERD
PEABODY WALL CO., COMPTON, CAL
Thoroughbred Jersey Cattle
Berkshire Swine
Young Stock For Sale
Santa Ana Car to Lugo.

NEW ORCHARD CULTIVATOR
Every orchardist ought to know about this cultivator. A riding tool designed especially for orchard work. A favorite on the coast. Ask your dealer.
MOLINE PLOW CO., Moline, Ill.
Send 4 cents in Stamps for Flying Dutchman Song Book

MY EXHIBIT OF
WHITE, BUFF AND PARTRIDGE **Wyandottes**
Won 26 Ribbons and Special Prizes at the Poultry Breeders' Show, 1907
R. D. Box D87 L. E. BERKEY, Fullerton, Cal.

The big canal of the Central Irrigation Co. was opened last week, taking its water from the Sacramento river. It carries sufficient water to irrigate 250,000 acres of farming lands in Glenn and Colusa counties.

some very choice specimens of his strain (the Pacific) may be seen in Mr. Andrew's yards at Hollywood. One difficulty with this strain has been too light hackle and ground color in the females, but Mr. Andrews is patiently overcoming that fault.

Not So Hard.

One objection urged against the Partridges is that "they are so hard to breed. Beginning only two years ago with absolutely no knowledge of poultry, much less of the intricacies of breeding, I have produced several specimens pronounced by Judge Ellison last winter as the best ever found in the show room East or West, which does not look as if they are so "awfully" hard to breed. I attribute my success not to wonderful ability but to having the right foundation stock.

Frequently you hear people say: "Anyone can breed a solid-colored bird," but can they? I don't know a harder proposition than to breed an absolutely white or buff bird. I am breeding both of those varieties, too and have a good bunch of prize winners among them, good foundation stock and all that, but for results I am not prepared to admit that the Partridges are one bit harder to breed. The secret of it all is to have your males and females properly mated. The veriest novice may have the right foundation stock and correct mating and achieve success in a season where an expert dealing with less perfect foundation stock will take several years of pains taking effort and careful selection to secure the same results.

A Good Foundation.

Being a novice myself I feel it right to say to a beginner with this breed: "Get the right foundation regardless of expense." However, the costliest birds may not be the best. They should be bred in line. A novice cannot afford to experiment or blunder, at least most novices cannot. Do not get a male from one line and a female from another line and expect a perfect issue. You might accidentally get it. The chances are a hundred to one against it. Let a reliable breeder mate a trio or pen for you. Then stick to them, breeding in line and study your birds for several seasons. Perhaps later you can afford to experiment with "out-breeding."

Utility as Well as Beauty.

Pardon the lecture. Let me say in conclusion: The Partridge variety possesses all the good utility features of the other varieties. They are usually very docile and easily managed. They have a color not easily soiled and do not require washing for the show room. If anything, they are a little more round and plump and offer a little more breast meat than other varieties, when they come to the table,—and many a lady has remarked on the beauty of the plumage for millinery—therefore I watch my fowls closely.—L. E. Berkey, Fullerton, Cal.

NEW TOPOGRAPHIC MAPS.

The United States Geological Survey has recently published atlas sheets of the following areas in this State: Davisville, Dunnigan, Indian Valley. The price of these maps is five cents each. Purchased in lots of 100, they sell for $3. Applications for copies should be addressed to the Director, U. S. Geological Survey, Washington, D. C.

BLACK CLOTHING AND BEES.

That the old idea that bees are irritated by black clothing is something more than theory, has long been known to me, although a new demonstration of proof occasionally comes with interest. In the honey season, especialy during extracting, when the bees are inclined to feel irritated anyway, the black overalls and shirts so many young men like to wear are found to be especially objectionable to the bees—so much so that we nearly always warn a new helper not to bring them. In fact, the new man generally gets his instructions as to the kind of working clothes to bring—blue overalls (white would be better if they did not soil so quickly), lightweight, light-colored print shirts, and plenty of changes of both.

But with reference to black clothing.

"Only a short time ago it was my privilege to spend part of the day in an out-apiary belonging to one of Ontario's well-known bee-keepers. During the time I was there, although I walked all through the yard quite a number of times, hardly a bee offered to sting, and I concluded they were a pretty quite lot of bees. During the day the owner came to the apairy and together we started to go among the bees, when, presto! what a change. In an instant the bees were fairly swarming about the head of our bee-keeper friend, and it was more than funny (to the writer) to see the way he sprinted for cover to the honey-house. As I had been wearing a straw hat, and the bee-keeper was dressed in dark clothing and a black felt hat, it struck me as a clear case of the bees being aggravated by the dark garb, especially the black hat. At least, that was the only construction I could place on the matter by the victim—he "guessed they knew him, and were trying to even up some old score."—American Bee Journal.

WATER CHARGE RUMORS FALSE.

The farmers in the West have been greatly alarmed in the last few weeks by the persistent circulation of a report to the effect that the administration was preparing to make a charge for water derived from the National forests and used for irrigation and other general purposes. The report, it appears, has not the slightest basis of fact, and has been denied by officials of the Forest Service.

People of the sections of the West where irrigation has been such an important factor in development were naturally much concerned in the rumored charge for water coming from the National forests. The interests of people concerned with forestry and irrigation are much the same, as the steady flow of most of the irrigating streams is absolutely dependent on the preservation of the forest watersheds.

In a letter to Hon. Edward T. Taylor, of Glenwood Springs, Colorado, concerning the rumored charge for water for irrigation, Forester Pinchot says that he does not believe that there ever should be, or ever will be, a charge for water for irrigation. The erroneous report was founded on misrepresentations regarding the charges which electric power companies are required to pay for use and occupancy of lands in the National forests for reservoir sites, conduit rights-of-way and power stations. This charge is solely for the use of the lands, based on their value for such purposes, and is not in any sense a charge of water. The appropriation and use of water is regulated solely by the State and the Forest Service has no jurisdiction in the matter.

In the case of irrigation projects the Forest Service does not even charge for the use of lands for reservoirs and canals. Hundreds of permits have been issued by the Forester to occupy and use National forest lands for irrigation reservoirs and conduits, and such permits are always granted free.

ABOUT FARM POWER.

The simple gasoline engines manufactured by the International Harvester Company are doing much in revolutionizing farm work. Many is the place they are now employed where formerly slow, laborious hand labor had to be resorted to. There is hardly any limit to the times and places where power of some kind can be used on the farm. With the perfecting of gasoline engines a long step was taken toward lightening of farm burdens. With the perfecting of the I. H. C. engines, the farm power problem was completely solved. These engines were made not only reliable but also simple, so that farmers who are not supposed to be machinists could run them. The I. H. C. engines quickly made the tread mills and the old-fashined horse-powers a thing of the past. I. H. C. engines furnish an economical power because they use little fuel. They can be adapted to use alcohol as well as gasoline, and therefore are destined to be run cheaply. They can be had in many sizes, such as can easily be moved from place to place, and are especially adapted to light work.

Local International agents can supply catalogues and give particulars about these engines. If you need power or want to post up on power questions, call and take up the questions with them.

BLOW UP THE ANTS.

Ants are unusually troublesome this season. They can be gotten rid of by the following method. Pour a small quantity of bisulphide of carbon into their nest, cover for ten minutes with a wet gunny sack, then explode by dropping a piece of lighted newspaper over it.

The agent for the Department of Agriculture has been visiting the beet lands of Salinas to learn as to whether the fields there are infested with nematodes, a pest which has been a serious menace to the beet fields of Europe. He reports the Salinas fields to be entirely free from them.

Red Bluff reports the sale of a 1200-acre farm, of which 700 were in bearing orchards, principally deciduous fruits and almonds. The purchaser was a syndicate of Canada, and the purchase was made for the purpose of colonization.

The apple orchardists of Pajaro Valley are arranging for a horticultural fair to be held the last week in September. O. D. Stoesser, J. W. Sill and A. N. Judd are the committee on arrangements.

Peach growers about Fresno are being offered 8 cents per pound for peaches and are not manifesting any particular anxiety to accept even that. Ten cents would look better to them.

D. G. Alkin is improving the property of the Stone Brothers near Imperial which has the largest vineyard in the valley. There are now 375 acres of vineyard on the ranch.

General Agriculture

DISK-HARROWING ALFALFA.

FROM a bulletin of the University of Arizona Experiment Station by R. H. Forbes we quote the following valuable hints on disk-harrowing of alfalfa:

The disking of alfalfa is quite generally practiced wherever the crop is grown in this country. There are several good reasons for this procedure, varying somewhat in the order of their merit according to local conditions.

In the first place the sharp disks set at a slight angle split and spread the crowns of many of the plants causing them to stool and send up an increaseed number of stems. Little or no damage results from the operation which should be carried on in winter or after a cutting when the alfalfa is in stubble.

In some localities, also, the resulting mulch of loose earth is stated to conserve soil moisture at times when rainfall is slight or irrigating water scarce. To this should be added the observation that disking incorporates with the surface soil much fertilizing material, especially alfalfa leaves which are lost during the operations of haying.

Destroys Insects.

In some sections of the country disking operates against certain insect enemies of alfalfa by destroying their egg deposits and larvae. In Kansas and Nebraska grasshoppers are said to be reduced by early spring disking, and in Arizona it is not unlikely that hibernating caterpillers of the alfalfa butterfly, Colias eurytheme, are to some extent destroyed by winter disking alfalfa fields.

The soil itself is subject to certain untoward conditions to which disking and harrowing may be applied with advantage. As elsewhere the passage of hay making machinery and work animals tends to pack the surface soil thereby lessening the penetration of air and water to the roots of the crop; and in addition during our mild winter season alfalfa fields are usually heavily pastured by cattle and horses, sometimes for several months of the year.

Silt Blankets.

More peculiar, however, to Southwestern irrigation conditions are the silt-blankets resulting from the use of the muddy irrigating waters charateristic of the region. These silt-laden waters when applied to an irrigated field drop their load of detritus upon the surface of the soil in a layer decreasing in thickness from the head to the foot of the field. Inasmuch as alfalfa is a perennial crop which cannot be deeply cultivated these sediments accumulate from year to year in deposits which frequently attain a thickness of 3 to 4 inches. Since the sediments composing these deposits are usually of a more or less plastic character these blankets are often noticeably impervious to water and to air, limiting the supply of these essentials to the deep-root systems of the plants. The result is a decreased yield, especially at the heads of the fields where accumulations are thickest.

Cultivation by the means of disk and spring-tooth harrows, is the best available means of handling these accumulations in alfalfa. This treatment breaks up the blanket and allows better penetration of water and air into the soil. Also to some extent it incorporates these sediments with the soil, thereby making their fertilizing values available to the crop which consequently realizes benefit instead of detriment from them.

Ten Acres a Day.

One man with an eight-foot disk and four horses will get over about ten acres of alfalfa in a day. This work may be done in winter when teams are more at leisure; but it is probable that in summer also after cutting and before irrigating, an occasional disking to break up the sediment-blanket may be well worth while, especially on the upper ends of alfalfa fields.

Summary.

At a trifling cost, therefore, varying according to individual circumstances, the disk-harrow splits and spreads the crowns of alfalfa plants causing them to develop additional tops; it destroys the eggs deposits and larvae of certain injurious insects; it breaks up the silt-blanket resulting from the use of muddy irrigating water allowing better penetration of water and air to the roots of the crop; and to some extent it incorporates beneficial sediments and fallen alfalfa leaves with the soil.

It is quite probably, speaking conservatively, that for some or all of these reasons the average alfalfa crop in Arizona may be increased ten per cent. by disking. But the cost of handling the increased crop is not greater in proportion; therefore, the net profit of disking on the basis of the above estimate may be somewhat more.

Buy A Combination Farm

THERE is one place where you can buy grazing land for your live stock and irrigated land for farming purposes side by side—That is in Sunny Southern Alberta, Canada.

Just stop and consider the advantages of such an arrangement as that—For farming purposes you have a never failing water supply which insures your crop when you place seed in the soil—You also are assured of having a constant supply of water for your live stock.

On the irrigated portion of your farm you can raise most any kind of grain or root crops—you can raise forage for your live stock.

On the non-irrigated section you will have the finest range for your live stock to be found in the world. The native grasses on the plains of Alberta are rich in the fattening properties so much so that Alberta beef shipped direct from the ranges has come to be considered as fine as the corn fed beef of the States.

Good markets are one of the features of Alberta—the farmer has no difficulty in selling everything he raises at prices as satisfactory, considering the cost of production, as are to be had anywhere.

Combination farms in the irrigated district of Southern Alberta are to be had at a price so low and on terms so easy that everyone should own a farm. Of course, the irrigated lands cost a little more than the non-irrigated and that is the advantage of being able to get a combination farm. A live stock range can be secured very cheaply, while in other districts where nothing grows on non-irrigated lands the settler must pay high prices for every acre whether he desires to utilize it for live stock raising or not.

The water supply in Canada is unfailing because the government does not authorize the construction of more ditches than there is water to fill, and the heavy water supply comes down from the mountains just at the season of the year when it is most needed, during spring and summer.

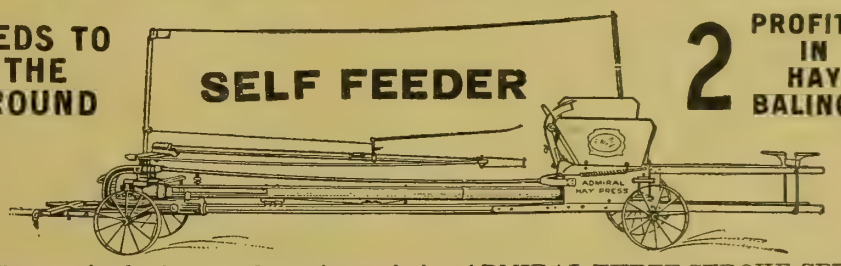
Come to Alberta and get a combination farm—we will be glad to tell you about the low prices and easy terms—We will also be glad to tell you how to see the country at very low cost—It is a fine trip. Write us for information and then come up.

CANADIAN PACIFIC IRRIGATION COLONIZATION CO., Ltd.
60 Ninth Street, West, Calgary, Alberta, Canada.
Sales Department, Canadian Pacific Railway, Irrigated Lands. 6

LEE'S LICE KILLER
Henry Albers Co. 315 South Main Street Los Angeles

AN ADMIRAL WITHOUT COST

3 FEEDS TO THE ROUND — SELF FEEDER — 2 PROFITS IN HAY BALING



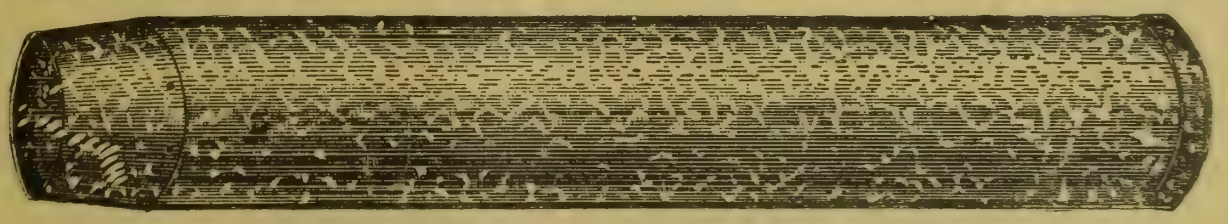
The difference in the increased earnings of the ADMIRAL THREE-STROKE SELF-FEED PRESS more than pays for the press in one season, at a conservative estimate of 2½ tons per day over the old style two-beat, foot-feed press, besides the ease of labor on both men and team, and better work. Let us figure a little to convince you.

2½ Tons per day for one week, 15 tons at $1.50 net.....$ 22.50
One month's earnings over the other press (26 days)..... 97.50
On an estimate of five months' work out of the year..... ..... 487.50

The above gain with the ADMIRAL more than pays for the press.

PACIFIC IMPLEMENT COMPANY, GEN. AG'TS.
131 TO 153 KANSAS ST.. SAN FRANCISCO. CAL.
Write for Circular and Full Information. ***A. A. WHITNEY, Special Agent***
Room 203, 316 Commercial St., Los Angeles, Cal.

TALLERDAY SURFACE IRRIGATION PIPE



SAVES WATER, GRADING AND TIME

The **only** way to **Irrigate Alfalfa. Cheaper** than **Flumes.** This is only **one** of our **specialties.** We make **Riveted Water Pipe** in lengths of **ten feet** from **single sheets.** Let us **prove** to you that we make **Pipe** and **Tanks right.** WRITE FOR CATALOGUE.

TALLERDAY MANUFACTURING CO.
636-7 Pacific Electric Building **Los Angeles, Cal.**

West Coast Stock Food

Best Condition Powder Made.

To prove it, we will send to new customers one 25 lb.

$3 Pail for $2 Freight Prepaid

to any point west of the Rockies. No cheap premiums no gaudy colored pictures, but a legitimate business offer to induce a trial, hoping to add many steady customers, feeling sure that a trial of the goods is the very best advertising.

No strings to this offer. Just send us your name, the freight station to which you want the goods shipped, mention this paper, and we will do the rest. Send money order or check with your order, and if everything is not as represented your money will be refunded.

WEST COAST STOCK FOOD has for many years been a standard condition powder in this section. Send for circular with few out of many testimonials.

Manufactured by the

West Coast Stock Food Co.

818 San Fernando St. (through to Alameda) Los Angeles, Cal.

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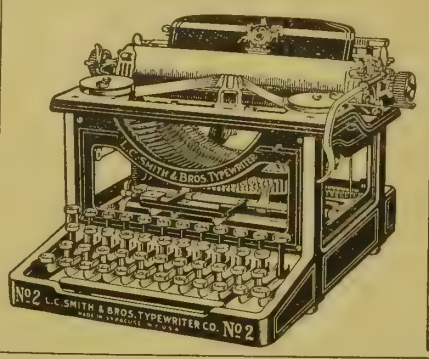
(Writing-in-Sight)

The most thorough up-to-date writing in-sight typewriter ever produced



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Tabulator you couldn't wish improved; device for writing in two colors all the writing in sight all the time. Send for art cotalogue free. Over one thousand L. C. Smith & Bros.' typewriters in use in Southern California.

L. & M. ALEXANDER & CO. Exclusive Pacific Coast Dealers.

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We manufacture the Improved Pacific Incubators and Combination Brooder, and also the "Business" Incubators and Brooders, and they can't be beat.

Our stock of Poultry Supplies is large, fresh and complete, at the very lowest prices.

Come and see us at our new store. We'll treat you right. Or send in your orders.

PACIFIC INCUBATOR CO.

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A GOOD WATCH

Especially Adapted for Hard Service

Seventeen fine Ruby Jewels, Adjusted to temperature, compensation balance, patent micrometric regulator, handsomely damaskeened. Fitted in solid back, dust proof, swing ring, Nickel or Silverine Case. **Guaranteed.** 18 Size, Large $ 9.00 16 Size, Medium $11.00

Prices on other movements, sizes and grades are equally low.

(Charges prepaid, money refunded if not pleased.)

Write for Complete **Watch, Jewelry and Silverware Catalog No. 10.** It is free.

BROCK & FEAGANS

Broadway & 4th St. Jewelers Los Angeles

Show Me the Man

That likes to know that his wife chopped the wood that cooked his supper because he forgot it, or that she or some one must clean the lamps. She is the best wife you will ever have. Now have the best

Acetylene Gas Machine

and make "you all" happy. We have it and guarantee it. You need it. Write right now.

20th Century Light Co.

609 E. Seventh St., Los Angeles, Cal.

WITH A SEIVERT OIL BURNER

You can burn 100,000 feet of air with every 130 gallons of oil; this means perfect combustion. To burn more than 100,000 cubic feet of air with 130 gallons of oil, there is a decided loss of heat. To burn less than 100,000 cubic feet of air there is a loss of fuel.

The only safe and reliable burner on the market.

Send for full particulars.

SIEVERT OIL BURNER CO. 1001 No. Alameda St., Cor. Main and Ord Sts., Los Angeles, Cal.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

LUMP JAW OR ACTINOMYCOSIS.

What is "lump-jaw?" My cow has a bunch the size of a man's fist on one side of her jaw. It is hard, but not sore, apparently. Cow seems in good condition otherwise. How can "lump-jaw" be cured—if this is it? Should milk from an affected cow be used?—R. J. T.

This is possibly a case of Actinomycosis which is particularly described as follows:

The disease is generally known among farmers and cattle dealers under the names of "big jaw" and "lump jaw." Attention is first directed to the animal by a swelling, or enlargement of the jaw-bone, and the opinion generally expressed when such a swelling is observed is that the animal has received some severe contusion which has been the starting point of the swelling. The swelling described may effect either the upper or lower jaw, or it may effect both at the same time, and produce considerable swelling of the soft tissues as well as enlargement of the bony structure. The swelling is somewhat painful under pressure and is attached to the bone and the skin. Finally soft areas appear beneath the skin, which break, forming ulcers or the openings of fistulous tracts extending back into the bone and discharging a yellowish, thick pus, which sometimes contains hard yellow granules or fragments of bone. As a result of the swelling described, the molar teeth of the upper and lower jaws may be pushed out of their natural position so that they are no longer in apposition, and they consequently cannot serve the purpose of masticating the food. It may also happen that from destruction of the tooth sockets the teeth drop out. As a result of ulceration it frequenly happens that an opening forms on the external part of the tumor, and frequently a similar destructive process forms as an opening into the mouth itself. Every swelling on the jaw of cattle is to be regarded as possibly actinomycotic if a definite cause for it is not known. In some cases it will be observed that these swellings, after growing for a short time, remain for a time or permanently in a stationary condition. The living parasite, by rapidly reproducing itself, extends through the bony tissue and, by setting up inflammation, causes increase of the swelling. The aim of treatment then, is to destroy the parasite, thereby arresting the growth of the swelling; and this is all that can be done where the utmost success practicable is attained. The importance of early treatment will, however, be understood when it is remembered that there is a continued and rapid multiplication of the parasite, and that this multiplication is attended with increasing damage to the tissues of the animal in which it is lodged.

Treatment.

When there is an external opening on the surface of the swelling, it should be injected with tincture of iodine. When there is no external opening, tincture of iodine may be painted on the skin. This treatment should be applied daily, and may be continued until it is apparent that the growth of the swelling has been checked. The iodine checks the growth of the swelling by destroying the parasite whose continuous development is the means of setting up diseased action in the bone. Internally iodide of potash should be administered in doses of from 2 to 3 drams daily, divided into two doses, and given morning and evening in a pint of warm water. This treatment may be continued for two weeks, when it should be discontinued for ten days, and then repeated if necessary. Other methods have been applied in treating this disease, such as burning the diseased bone with the hot iron, which is said to have proved effectual in checking the progress of the disease.

Should you administer the iodide of potash internally it will probably largely reduce the milk of your cow and at the same time make the milk unfit for use. It will also produce abortion when the cow is well advanced in pregnancy.

The question of use of meat of such animals is generally claimed to be perfectly safe when the disease is in its first stages and located locally.

Mange on Horses.

Horses in Imperial Valley are troubled with mange. Kindly give formula.—R., El Centro.

This disesase is due to irritation of skin caused by microscopic mite of which there are many varieties. So to say that a thorough washing with soap followed by a wash of kresoline and water. We give below a treatment recommended in Diseases of the Horse, issued by the Department of Agriculture, which is doubtless a better remedy:

"The treatment consists in the removal of the scabs by soapsuds and, if necessary, a brush and the thorough application of tobacco 1½ ounces and water 2 pints, prepared by boiling. This may be applied more than once, and should always be repeated after fifteen days, to destroy the new brood that may have been hatched in the interval. All harness and stable utensils should be similarly treated; blankets and rubbers may be boiled, and the stalls should be covered with a white-wash of quick-lime containing one-fourth pound of chloride of lime to the gallon."

Loquat Seed for Stock.

I wish to know if loquat seed, which are about half the bulk of the fruit are a safe stock feed, as the horse cow and pig will eat them like acorn mast.—K.

We have no knowledge of a test of such a food for stock but would imagine no harm would come by it. It will be comparatively easy to make a test using care until results can be observed.

Curl Leaf of Peach.

When is right time to spray for "curl leaf" of peach, and is the lime sulphur and salt the best remedy?—E., Turlock.

When the trees are dormant is the time to spray for curl leaf. The sulphur lime and salt is a good wash but the Bordeaux is better. It should be applied before the spores find lodgment on the leaf, for when once established is hard to kill without killing the tree.

Opening of San Jacinto Forest Reserve.

That we might answer a large number of queries regarding the opening of the San Jacinto Forest Reserve for public entry, we called upon O. R. A. Robinson, receiver and special disbursing agent of the U. S. Land office in Los Angeles. From him we learned:

On July 27 a small part of the San Jacinto Reserve will be thrown open for inspection and one month later, August 27, will be open for entry. These lands were withdrawn and made a part of the San Jacinto Reserve August 23rd, '03 and Oct. 4, '06 and were to be used for forestry purposes. Closer investigation, however, developed the fact that these particular townships were of but little value for forestry. The lands are on the northern and eastern slopes of the reservation, some being almost inaccessible.

All the lands comprise about five townships. For agricultural purposes they have but slight value and from what we learned at the land office, we presume will not attract many farmers who investigate.

Some have also confused the settling of the Yucaipe Valley near Redlands with this forestry reservation. The Yucaipe is said to be a very fine body of land, but is the property of a company which is dividing into parcels and selling to settlers.

From a circular sent out by the Department regarding the San Jacinto and other reserves we quote:

"During the past winter and spring the Forest Service has had a force of men in the field readjusting the boundaries of the National Forests, and in accordance with the policy of the Forest Service all land which is suitable for other purposes is now being excluded.

"Scattered all through the National Forests are many agricultural lands, most small and narrow and more or less isolated so that their elimination is impracticable. Settlement is encouraged in these lands, which are open to homesteaders under the Act of June 11, 1906. This act provides for the homesteading of agricultural lands in the National Forests and is being generally taken advantage of for that purpose. Stockmen and ranchers are not slow in realizing the benefits of residence in National Forests and in many cases petitions have been received by the Forest Service for further extension of their area. This, however, the Service is careful not to do unless it can be shown that the land is chiefly valuable for forest or protection purposes."

Apricot Disease.

What is the matter with my apricot trees? They are two years old and looked fine until they started to leaf out; then they began dying. Some made a growth of six to eight inches and then died. The bark seemed to die on the body first, but on some of the trees only the limbs died. I have about 3000 trees and about 50 of these have died this spring. Most of them are starting from the ground again just above the bud. I lost about 25 trees last year in the same way. They nearly all started from the ground and made a good growth but some of those died this year. I sprayed them last November with Bordeaux. Please let me know what to do with them to save them next year.—J. F. M.

Your trees are suffering from a disease of the sap which causes the sap to ferment. When you prune next winter, do not cut into a healthy tree with the same implement that you have used on a diseased tree without disinfecting it in a solution of bluestone water. We will not say that this precaution will keep the disease from spreading. It is liable to get into the circulation even if you do not go into the orchard, but if you cut into a tree with infected tools, the tree is sure to become infected. That is the only difference. We suggest that you saturate the soil around the base of the trees with a weak solution of bluestone water. This will help to obviate any root infection. These are only suggestions for the exact nature of the disease is not known. There is one consolation, the disease has made its appearance in many places in the south and then utterly disappeared. We think you will have the same experience.

Soft Scale.

We have a Golden Drop Plum tree about four years old with soft brown scale about the size of a lady-bug. They killed one tree last year. What can we do for it?—S. H.

Spray now with kerosine emulsion. This is made by mixing three quarts of kerosene, three pints of water or sour milk and three ounces of soap. Mix with a spray pump till it is a creamy mass. This will make fifteen gallons of emulsion. This formula requires at least fifteen minutes hard pumping to form an emulsion. By using eight times as much soap, it can be made in five minutes and is a better emulsion that is recommended when but a small amount is needed.—J. W. M.

Diabrotica.

I enclose two specimens of lady-bug or beetle that destroys our bean vines, also cucumbers. If you can tell what will destroy them or keep them off the vines will be doing a great favor for this part of the country. They also eat the silk from the sweet corn.—A. V., Acampo.

These are two members of the Diabrotica family. The one with the spots was punctata and the striped one was vittata. They can be conquered by use of the Paris green or better by the arsenati of lead or Disperene spray.

Staking Malagas.

Will the Malaga grape do well without staking, that is, treated the same as the Muscat? —R. L. T.

The Malaga grape is a much stronger grower than the Muscat and should be pruned with at least four buds to the fruiting branch and a spur of one bud at the base. This comes under the head of half long pruning and with the Malaga does not require staking unless the summer growth in your case shows that it requires it. We have pruned them both ways, short and half long, and used no stakes with good results. A weak growing variety, one with slender canes, requires staking with half long pruning.

Eucalyptus and Clover.

By this mail I send you a box containing a sprig of Eucalyptus and also one a species of clover. Please name them for me and oblige.—J. B. S.

The Eucalyptus is Rudis, though to be sure we should see a ripened seed pod. If it is, it is one of our finest Eucalyptus. The clover is sweet clover (Meliotus indica) and a great pest along irrigating ditches and elsewhere.

Powdery Mildew on Apples.

Please tell what to spray with for powdery mildew on apple trees. I have one tree that is affected.—D. C.

Dust with sublimed sulphur. That will act as soon as you have a temperature near 80 degrees.

Legal Queries

Answered by L. M. FALL, Esq.
204 Frost Bldg., Los Angeles, Cal.

Husband and Wife Joining in Deed.

The owner of two lots in the city will sell if I take a deed to same with his signature only. (Lots are record ed in his name.) Would deed be legal? Could his wife or her heirs or assigns claim an interest in those lots? Could a clause be inserted in his deed to bar out above claims?

If it is community property or his separate property his signature is sufficient. The wife has no interest in or power over community property. Her only rights in regard thereto are (a) a right to insist that the husband receive value for any disposition of it which he may make; (b) a right to have certain disposition made of it upon the dissolution of the marital community by divorce or death. While the deed of community property executed by the husband alone may state that a valuable consideration has been received, it is not conclusive and may be disproved by any person in interest. If the wife should claim the property to be community property and prove the statements in the deed to be untrue the purchaser's title would not be good. It is always best for both to join in a deed.

Homestead.

If a man pays a price and only partly pays for it, taking a deed and giving a mortgage can his wife homestead the place if the deed is in his name alone yet both sign the mortgage? Please answer through the Cultivator. S. C.

Yes. A married woman may claim a homestead in (a) community property; (b) her husband's separate property; (c) her separate property. And likewise the husband may claim a homestead, except in case of the wife's separate property she must consent by joining in the declaration of homestead, and in no other manner. The homestead consists of the dwelling-house in which the claimant resides and the land upon which it is situated.

A Difficult Milking Problem Solved

One of the most embarrassing questions confronting the dairymen, especially those on the Pacific Coast, at this time, is that of labor. If it can be secured on any terms, it is more often incompetent, or at least very unsatisfactory. Nothing is harder than to secure a thoroughly trustworthy milker. For this reason dairymen have longed for the perfecting of some mechanical device which would release them from the bondage of incompetent help. As a rule, however, the process of milking has been deemed of such a nature that such mechanical appliance could never be entirely satisfactory; but for the past year or more, reports of various trials with milking machines have been made and the interest has increased and the question is more persistently asked than ever, "But will they be a success?"

One very positive and convincing answer to just that question is now furnished the Cultivator in the letter which follows. This letter was written by practical dairymen, who have given the machine a thorough test of sufficient length of time to know that it will not only work experimentally in the hands of an expert demonstrator, but has accomplished the most satisfactory results in practical everyday work with the ordinary help of the dairy. This letter is dated at Oxnard, California, where, we understand, Messers. Donlon Bros. have found it so satisfactory that, as they say in their letter, "if our machines were destroyed tomorrow we would immediately install a new outfit."

"Replying to yours of the 27th, regarding the milking machines installed in our dairy, beg to advise that the name of the machine is the Burrell-Lawrence-Kennedy Cow Milker and that it is manufactured at Little Falls, N. Y.

"You ask if we are pleased with the machines. If our machines were destroyed by fire or otherwise, we would immediately install a new outfit. We believe this to be as strong a recommendation for the machine as it is possible to give. We further believe that the cow milking question is now practically solved and that it will be only a matter of time when all large dairies will use machines instead of the old hand process.

"The Burrell-Lawrence-Kennedy is very simple. Any man with half a head can operate this machine, even though he has never milked a cow. Each machine milks two cows at the same time, and one man, after a little practice, can easily operate two machines. Our old cows took kindly to them from the start; the heifers kicked quite a bit, but now stand like old cows. The connections with the cow do not in any way hurt her teats and there is absolutely no danger of the machine drawing blood, as some machines do. Another great point of this machine is that we get clean milk, something that nobody can do by the hand process.

"Baker and Hamilton are the sole agents for this machine on the Coast and any information that you may desire about the machine itself can be had from them. We shall be glad to furnish you with any additional information regarding the working of the machine.

"About the clean milking of the machine, we find that they strip the cow clean, if not cleaner, than by the hand process. We get about the same amount of milk now as we did before we started using the machines a month ago and the amount is increasing.

"Trusting this is satisfactory,

"Yours very truly,

(Signed) "DOLAN BROS."

This is surely strong commendation and the advice to write to Baker and Hamilton, if followed, will doubtless bring an interesting answer.

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IF WE KNEW.

There are gems of wondrous brightness
Ofttimes lying at our feet,
And we pass them, walking thoughtless
Down the busy crowded street;
If we knew, our pace would slacken—
We would step more oft with care,
Lest our careless feet be treading
To the earth some jewel rare.
If we knew what hearts are aching
For the comfort we might bring,
If we knew what souls are yearning
For the sunshine we could fling;
If we knew what feet are weary
Walking pathways roughly laid.
We would quickly hasten forward,
Stretching forth our hands to aid.
If we knew what friends around us
Feel a want they never tell—
That some word we've lightly spoken
Pained and wounded where it fell.
We would speak in accents tender
To each friend we chanced to meet;
We would give to each one freely
Smiles of sympathy so sweet.
—Anon.

TONY'S SEARCH.

POOR little Tony was tired. It seemed to him that the days were much longer in the big American city than they had been in sunny Italy, and he had walked so far today, and played many tunes on his violin. People had been very kind to him and gave him lots of pennies, and the men from his country that he questioned, who were working on the streets and understood him, often shared the contents of their lunch pails with him, after listening to the story of how his father had come some months ago to get work in the big city he had heard so much about, and was going to come home with lots of money. But when he didn't come, Tony had begged of his mother to let him sail with a neighbor who was coming to find work, and would look after Tony all he could.

Tony's mother was very much afraid to have him leave home, too, but he told her he could take his violin, and go around playing, just as old Pierre down in the valley had played on an organ and came back with his monkey jocko all dressed in red velvet and gold trimming. Tony felt sure he could do as well, and then he would surely meet his father somewhere. The anxious mother consented at last, and now he has been so long a time and seemed no nearer finding his father than he was at first. Although he was a plucky little fellow and with all the faith of childhood, he could not help the tears which sometimes overflowed the dark eyes and trickled down the brown cheeks on to his little worn and dusty jacket, but he would not give up the search.

* * *

"Doctor, please come here just a moment," said a white-capped nurse in the accident ward of the hospital. "There is a little boy out on the street playing a violin. There, do you hear him? This patient insists that he be brought in, as he says he is his son, as near as I can understand. What is it, do you suppose; delirum again?" and they both looked critically at the excited man, who begged in his weak voice and broken English to let him see the boy.

The kind hearted doctor looked puzzled, as no one had ever called on this patient, and he did not seem to have any friends, but as he grew more eager with every strain of the music outside, the doctor said:

"Well, it can't be any worse to humor him and let him see the boy than to have him in this state of nervousness." Saying which the doctor stepped to the door and beckoned to the boy to come in.

Wonderingly Tony followed the doctor up the aisle between the rows of cots, tightly clasping his violin. He didn't know what to make of the strange looking place, and the pale faces in the beds almost frightened him. At last, as they were half way down the room, he heard a well-known voice call, "Tony! Tony!" and, looking with bewildered eyes, he saw that he had at last found the dear father he had come so far to seek.

He was clasped in the weak, but uninjured arm of the happy father. The doctor and nurse looked on in wonder as they saw that the patient had not been mistaken after all, as they saw the eloquent eyes of both sparkling in recognition of each other.

How fast Tony and his father talked! Tony told of the mother and the little sister, and of how he had hunted the city streets and was almost in despair of ever finding the father, until fate had led him right to the hospital, where the poor father had lain for months after a huge derrick had fallen on him. He had lingered between life and death, and had become so weak that he could hardly remember anything, until he heard the well-known strains of his little Tony's violin, which had carried him back to dear old Sorrento, the village he loved so well, with its vine-clad hills and the nightingale singing in the orange groves. It seemed to put new life into him; better than medicine, the doctor said.

* * *

When the neighbor returned Tony and his father were with him, and the mother felt that her prayers at her little shrine had not been in vain. Tony thinks more of his violin than ever, as without it he says he never could have succeeded in his search for his father.

IT IS UNUSUAL.

Mark Twain had finished his speech at a recent dinner party, and, on his seating himself, a lawyer rose, shoved his hands deep into his trouser pockets, as was his habit, and laughingly inquired of those present at the society dinner:

"Doesn't it strike this company as a little unusual that a professional humorist should be so funy?"

When the laughter that greeted this sally had subsided, Mark Twain drawled out:

"Doesn't it strike this company as a little unusual that a lawyer should have his hands in his own pockets.

"We've only got a knife or two packed in the basket with the pie. What shall we do?"

"That's all right. Up yonder I think you will find a fork in the road."

HINTS FOR THE COOK.

Fried Bread.

This is a good breakfast dish c for luncheon or supper, and is equall acceptable for children and grow people. Cut the slices nearly a inch thick. Spread with salt por drippings—and turn the spread sid down on a hot frying pan (or "spider as I was taught to call it) over slow fire. When that side is brow turn it over, salt it, turn in three t blespoons of cold water, cover, and l the second side brown. You will neve be able to fry enough for th family, once they have had the app tizing dish as a side relish with othe things.

French Fry.

Beat an egg with a small pinch salt. Add a pint of milk and stir u til well blended. Dip the slices the mixture and fry in a hot "spide with pork drippings.

Tomato Fry.

Prepare in either of the abov ways, and put each slice on a se arate hot plate, turning hot stewe tomatoes over each.

With Cream of Celery.

Prepared either way, serve th slices separately, as above—substitu ing the cream of celery for the tom toes. This is made by mixing flou salt and milk, as for grav and adding finely cut cele that has been boiled until very te der.

With Puree of Peas.

Use split or whole dried peas, pr pared like beans for soup, omi ting the pork. Have this ready pour over the fried bread.

With Scrambled Eggs.

Use milk in scrambling egg and dress the bread with the pre aration.

Under Creamed Hash.

The fried bread should be cut in small squares and laid hot on a h platter, and the hot hash turned ov it.—Mrs. M.

Oatmeal Cookies.

One cup sugar, two-thirds of bu ter or cooking oil, two eggs well-bea en with two tablespoons of mil one cup of chopped raisins, floure one small teaspoon soda, one teaspoo cinnamon, two cups flour, two cup rolled oats. Drop batter from spoo in cake far apart and flatten wit fork dipped in milk or water and bak in quick oven.

Hot Tea Cake.

Beat two eggs to a froth, then ad one-half cup of sugar. Into one cu of sour cream stir one-half teaspoo of soda dissolved in boiling wate add eggs and sugar, with a pinch salt and flour enough to make a sti batter as for griddle cakes. Bake i gem pans and serve hot.

Small Ginger Cakes.

Four tablespoons of sour milk, thre of butter or lard, one beaten egg, on teaspoon each of soda and ginge Put all into a large cup and fill wit molasses. Add sufficient flour t make a stiff batter. Bake in ge pans in a slow oven. Nice war breakfast cakes.

Devil's-Food Cake.

Two cups of brown sugar, 2 egg ½ cup of butter, ½ cup of hot wate ½ cup of sour milk, 1 teaspoon of s da. Dissolve the chocolate and sod in the hot water. Use flour enoug to make batter for layer-cake.

Filling: Boil until it gets quit

thick, 1½ cups of brown sugar, one-third cup of butter and ½ cup of hot water.

Orange Sago.

One cup sago, two cups cold water, three cups orange juice, equal to the juice of about twelve oranges, two cups sugar, pinch of salt. Wash sago well. Soak in the water two hours. Add orange juice, sugar and salt and boil in a porcelain vessel until sago is clear. Turn into a bowl which has been rinsed in cold water then it will turn out easily. Serve with sweet cream or a delicate boiled custard.

DONT'S FOR BOYS AND GIRLS.

Boys.

Don't wear your hat in the house.

Don't sit while a caller stands.

Don't get into the habit of using slang. Vulgar expressions denote degeneracy.

Don't be ashamed of gallantry toward women and girls. A gentleman is always courteous toward the opposite sex.

Don't fall into bad habits with the fixed intention of "swearing off" as you grow older. Habits formed in youth accompany one to the grave, bad habits often burying their victims before their time.

Don't speak of your father as "the goyernor," nor of your mother as "the madam." If you do not show respect to your parents you must not look to the world to respect you.

Girls.

Don't be rude toward your brothers. Boy's feelings are as sensitive as girls.'

Don't forget to give as much respect and obedience to your father that you do to your mother. Often the rightful head of the house is placed at the foot through sheer thoughtlessness on the part of his family.

Don't forget that it is in most cases it is the father who devotes his life in work and worry to provide for his family, and show him the gratitude he deserves.

Don't have secrets from your mother. Remember that she was a girl once like yourself, and that she will prove the most sympathetic confidant in the world, or she holds your happiness and welfare at heart.

SUGGESSTIVE FRENCH PROVERBS.

To the hungry no bread is bad.

A cheap bargain takes money from the purse.

From the hand to the mouth the soup is often lost.

Do not speak of a rope in the house of one who was hanged.

You will never buy cheap if you don't ask the price.

Decency is the genuine tint of virtue, and the disguise of vice.

Love and smoke cannot be hidden.

The cost takes away the taste.

A sparrow in the hand is better than a goose on the wing.

'Tis a hard winter when one wolf eats another.

If the sky falls we shall catch larks.

Our minds are as different as our faces; we are all traveling to one destination—happiness; but few are going by the same road.—Machiavelli.

"What a bright little thing!" exclaimed the society woman, patronizingly cooing at a baby out for an airing in the park. "Whose little one is this?"

"Yours, ma'am," replied the nurse. "I'm the new nurse that kem yisterd'y"—Philadelphia Press.

ONCE UPON A TIME.

Heard I once my old nurse telling
Stories by the fire at night,
All about big, bearder giants
Till I shivered in affright;
Then her voice came from a distance
From a drowsy, far-off clime,
Echoing the sweet old cadence,
"Once upon a Time."

Read I once a golden story
Of King Arthur's wonder court,
Lancelot and Guinevere,
All the knights of brave report.
But amidst the loving, hating,
Still I heard the insistent chime,
Like a cuckoo clock repeating,
"Once upon a Time."

Will our lives when we have lived them
Seem like stories we have read?
Stories which our nurses told us
As we lay all snug in bed?
Will they seem as vague as dreams are,
All the days we thought sublime?
Shall we hear the faint, low whisper,
"Once upon a Time."

When the earth and day and sunlight
Grayly fade away,
When the years that we have lived here
Seem like one brief day;
Shall we hear again at twilight
Echo of our nurse's rhyme,
"Here you lived and loved and labored,"
"Once upon a Time."

—Selected.

MISTAKES IN MAXIMS.

Virtue is its only reward.

The wages of sin is debt.

Policy is the best honesty.

A pitch in time saves nine.

Many hands like light work.

Osculation is the thief of time.

A bird in the hand lays no eggs.

Every dogma must have its day.

A thirsty man will catch at a straw.

The woman who collaborates is lost.

It is not good for a man to give a loan.

Straws show which way the gin goes.

The rolling stone catches the worm.

Absinthe makes the heart grow fonder.

The lack of money is the root of all evil.

It's a wise child that owes his own father.

A man is known by the trumpery he keeps.

Where wisdom is bliss it is folly to be ignorant.

All that a man hath will he give to his wife.

NOT THE HISTORIC FORT.

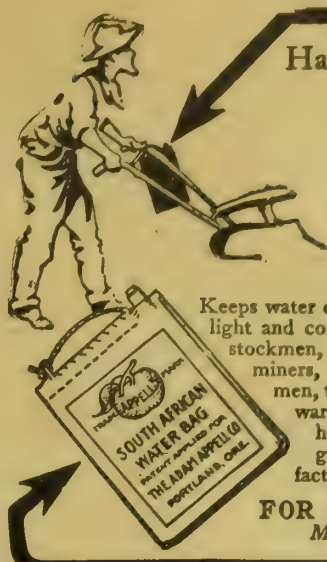
The Sutter's fort reported to have been swept away in the flood is not the historic but primitive fortification erected by Captain John A. Sutter where Sacramento now stands, and which was the arrival point of the swarm of gold seekers coming across the plains in 1849. That ancient adobe fortress has been restored and is now the property of the State. A flood sufficient to destroy it would overwhelm the city of Sacramento. The fort washed away was a small portable iron entrenchment made in Europe and shipped out here in sections by Captain Sutter. It was situated on the mound near Marysville, and was of no value and little interest, as it was never associated with any historical event.

Jigley—We were talking about suburban cottages, and Subbubs remarked that the only thing they ever dreamed of out his way in Boghurst was Queen Anne.

Citiman—The idea! Is that the way he pronounces it now?

Jigley—Prouonuces what?

Citiman—Quinine.—The Philadelphia Press.



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AT REDUCED PRICES BALANCE OF season from my prize winning Barred Rocks; won all special and 13 regular prizes on Barred Rocks at late Los Angeles show. Eggs from best pens, $2.50 per 15; $10 per 100. Can furnish any quantity. Also offer extra bargains in breeding stock. CHAS. E. SMITH, Gardena, Cal. San Pedro Interurban car to Smith's Crossing.

McKINLEY POULTRY FARM—BREEDERS of Bluff and White Wyandottes. Member American Buff Wyandotte Club. Golden Seabright and Pyle Game Bantams. Eggs $3.00 and $2.00 per 13. Take San Pedro Interurban car to McKinley, first house north. BOX 11, R. F. D., Gardena, Cal.

BLUE RIDGE POULTRY YARDS, W. H. Brown, Prop., 128 Ave. 32, Los Angeles, Cal. Breeder of Blue Andalusians. Won more first prizes than all our competitors combined. All specials went to our strain. Eggs $1.50 and $2.00.

S. C. WHITE LEGHORN EGGS FROM THE bred-to-lay Blanchard strain. Large birds. $1.00 for 15; $6.00 per 100; Free city delivery. C. M. GIBBS, R. F. D. No. 4, Los Angeles, Cal. Phone W. 591

POULTRY.

WHITE PLYMOUTH ROCKS EXCLUSIVEly. The largest flock of prize winning birds in the West. At the late Los Angeles show, 1907, we won twenty-three out of a possible twenty-five prizes. We offer extra bargains in our this year's breeders. Will sell to suit purchaser. Eggs $2.50 per 15; $10 per 100. A. J. LITTLE, Monrovia, Cal.

SPECIAL SALE—TWO YARDS OF ABOUT 20 good Buff Wyandotte Pullets at $2.00 each. Order at once; satisfaction guaranteed. M. E. DILLINGHAM, San Gabriel, Cal.

SINGLE-COMB WHITE LEGHORNS, FINE white, large, birds; good layers. Hatching and shipping chicks. Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER, Ontario, Cal.

MACHINERY.

FOR SALE—COMPLETE PUMP PLANT, three-horse gas engine, capacity twenty-three hundred gallons per hour. Good order, reliable, cheap. JOSEPH THORNDYKE, Pasadena, Cal. R. F. D. No. 1.

CHEAP FOR CASH—ONE 34-H. P. FAIRbanks Gas Engine in good condition, and can be seen in operation at our plant. AXELSON MACHINE CO., 1406 San Fernando St., Los Angeles.

DUCKS.

INDIAN RUNNER DUCKS—EGGS AND stock for sale. Eggs, $1.00 per 13; $5.00 per 100; stock, $1.00 up. Black Langshan prize pen, $2.00 per 13. CLYDE J. MOSS, successor to F. M. Bender, Corona, California.

POULTRY FOODS.

FOR SALE—OVERSTOCKED ON CHICK Feed, Cyphers; an error in telegram has caused the trouble. Our special price for a few days is $2.75 per 100; $1.50 per 50; regular price, $3.25. Samples mailed free. Full line Cyphers Foods. KLONINGER BROS. CO., 838 South Main.

ARMOURS BEEF SCRAPS, MEAT MEAL, and Blood Meal for poultry feeding are highest in digestible protein. If your dealer does not handle them write us direct. Circular containing formulae free. THE ARMOUR FERTILIZER WORKS, 736 H. W. Hellman Building, Los Angeles.

TREES.

FOR SALE—4000 VALENCIA AND 1000 W. Navels; one year buds on three year roots, clean and vigorous; buds taken from bearing trees. F. E. CHAPMAN, R. F. D. Box 34, So. Craig Ave., Pasadena, Cal.

FARM LAND.

LAND BY WHICH YOU MAKE MONEY, because it costs but $18 to $25 an acre, with abundant water at 50c an acre. Easy terms. Grand crops. Good markets. Fare rebated. Address, W. R. GILSON, 333 I. W. Hellman Bldg., Los Angeles.

COFFEE.

SAVE ONE-HALF BY BUYING DIRECT. Ten lbs. Aroma Coffee $2.30 or 10 lbs. Fancy Ceylon or Japan tea $3.00. Freight prepaid. Money refunded if not satisfactory. Send P. O. order or check. F. W. SPARR, 114 E. Market St., Los Angeles, Cal.

MISCELLANEOUS.

EXPERIENCED PRUNER—HAVING HAD years of experience in pruning orange and lemon trees. I offer my services for such work. Address, C. D., care Cultivator office.

WANTED—CASING AND ONE THOUSAND feet of pipe to irrigate alfalfa. A. Z. TAFT, Hollywood, Cal.

WANTED—SOME APPLIANCE FOR MOVing full-grown lemon trees. A. Z. TAFT. Hollywood, Cal.

The new map of California, issued by the California Promotion Committee, is just off the press. It has been carried quite up-to-date and shows the many recent developments in railroads, steamship routes, pipe lines, etc. In addition to the map itself there are given a full complement of the latest and reliable statistics concerning the cities and their population, and the agricultural, mineral, horticultural and manufacturing resources of the State.

The Produce Markets

Los Angeles Markets

LOS ANGELES, June 5.

Large supplies meeting a good demand seems to be the satisfactory condition of the market this week. Eggs commanded the most interest and the rivalry to purchase has boosted the price a couple of cents over last week's quotation.

Butter.

Butter shows a slight advance though the receipts are heavy, more so than at corresponding date last year.

Creamery extra	55
Creamery first	52½
Dairy	22½

Cheese.

Cal. Young American, per lb	19
California Anchor	18
Cal 3-lb. hand	20
Northern fresh	15¾
Domestic Swiss	18½
Imported Swiss	30

Eggs and Poultry.

Northern eggs are yet weak but local candled are sought for so that prices advance nearly every day. As long as the market is cleaned up as it is now the price will hold firm and advance.

The prices given are those of the commission man to the retailer.

Eggs, local, candled	23
Eggs, case count	21
Eggs northern	17

The following are average prices which dealers pay to producers for live weight:

Hens, per lb	13
Young Roosters, per lb	17
Fryers	20
Broilers, per lb	26
Old Roosters	7
Turkeys	17
Geese	12
Ducks	13
Squabs per doz	1.50@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lbs	7.50@8.00
Prime Steers	4¾
Heifers	4¼
Calves per lb	5
Sheep, ewes, per head	5.00@5.25
Lambs per head	4@4.25
Wethers	5.50

Potatoes.

Potatoes are firm and some dealers report they are getting half a cent more than a week ago on fancy new crop.

Colorado	2.00
Minnesota	1.75@2.00
Oregon,	1,80
New	2.00

Onions.

Silver skins per box	75
Nevadas	2.50@2.60
Texas	1.75@1.80
Imperial per crate	1.30
Imperial per sack	1.95
Garlic	12

Vegetables.

Vegetables are a little shy in quantity and a clean market is the result. Good prices prevail.

Asparagus lb	12½
Artichokes	75
Beets per doz	30@40
Bell Peppers green lb	20
Beans 1 wax	4@5
Beans green	3@4
Cabbage sack	1.00@1.15
Chili Peppers Green	30
Cucumbers per doz	50
Corn per doz	35@40
Cauliflower	1.50
Carrots per doz	30@40
Egg Plant per lb	25
Green Onions, doz bunches	10@30
Lettuce, per crate	75
Mushroons per lb	1.00
Rhubarb per box	1.00
Radishes per doz	15@20
Summer Squash crate	60@75
Tomatoes, Mexican crate	2.00
Turnips, doz bunches	40
Peas sugar per lb	5@6
Spinach, per doz	10@15
Water Cress per hundred	40

Citrus Fruits.

Valencias	1.50@2.75
Navels	1.25@2.50
Grapefruit Seedless	2.00@2.50
Grapefruit Seedlings	1.25@1.35
Seedlings	1.25@1.50
Lemons, fancy	2.00
Lemons, choice	1.25@1.50
Tangerines, halves	1.50@1.75

Fresh Fruits.

Fresh fruit is short in supply with firm market.

Apples, Ben Davis	1.50@@2.00
Pearmains	1.75@2.00
Apricots	1.75@2.25
Blackberries	4
Currants per 4 bskt crate	1.75
Cherries loose	9@11
Cherries black	1.25@1.50
Figs black per lb	17@20
Gooseberries	7@9
Logans	4
Loquats	.5@10
Peaches per box	2.00
Raspberries	7@8
Strawberries	3½@5
Watermelons per lb	4

Dried Fruits.

Evap. Apples, fancy, per lb	9½
Apricots	17@17½
Peaches	12½
Pears	12@13
Prunes, fy,	5@8

Raisins—Four-Crown cluster, per box, $2.75; loose, 50-lb. box, 9c per lb.; 3-Crown London layers, per box, $1.95; loose 50-lb. box, 8½c per lb.; do, 2-crown, per box, $1.75; do, loose, 10-lb. box, 8c per lb.; seedless, fancy bleached, per lb., 12½c; Sultanas, unbleached per lb., 8½c.

Beans, Dried

Limas per ctl	4.85
Pink No. 1	3.00
Lady Washington	3.00
Small White	3.20
Black Eyes	5.50@6.00
Garvanzas	5.50@6.00
Lentils	12@15

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted, w. w. 60-lb cans	7
Light Amber	6½
Comb, water white, 1-lb. fms	12@15
Light Amber	10@12

Nuts.

Almonds per lb	19@25
Peanuts, Virginia	9
Peanuts California	6@7
Walnuts, No. 1 S. S.	14@15

Hay.

Barley, No. 1	14.50@16.50
Alfalfa, northern per ton	13.50@14.00
Plain Oat Hay, No. 1	14@16
Wheat No. 1	12@14

Grain.

Purchasing prices f. o. b., Los Angeles are:

Wheat, new, per cwt	1.70@1.75
Barley	1.17½@1.22½
Corn, per cwt	1.50

Feed Stuff.

Selling price F. O. B. Los Angeles as follows:

Cracked Corn	1.55
Shorts	1.45
Bran	1.30
Egyptian Corn,	1.50
Rolled Barley	1.40
Feed Meal	1.60

San Francisco Markets

SAN FRANCISCO, June 4, 1907.—

Butter.

Butter shows a raise of one cent during the week and is in brisk demand.

California, ex per lb	23
California, firsts	22½
California, seconds	22
Packing Stock	20

Cheese.

Cal. Young American, fancy	14½
Cal Flats, fancy	13
Eastern, fancy	18

Eggs and Poultry.

Eggs are in keen demand with a materially higher price than last week. Still stronger market anticipated.

Fresh Ranch Eggs	20
Eggs, first, per doz	18½
Eggs, seconds, per doz	17
Eggs, thirds	16

A goodly portion of last week's stock of poultry was left over, which will doubtless cause the market to be heavily supplied for several days to come. A decidedly improved business in Eastern grades is anticipated the last half of the week. California stock meets with hardly and demand whatsoever and all resonable offers on both this and Eastern varieties are for the present readily accepted.

Hens per doz	4.50@5.0
Hens large	5.50@6.0
Young Roosters, large	7.00@8.0
Young Roosters, small	4.50@6.0
Old Roosters	4.0
Fryers, per doz	5.00@7.0
Broilers, per doz	3.50@4.0
Ducks, young	6.50@8.0
Geese, per pair	1.75@2.0
Turkeys, per lb	16@1
Pigeons	1.25@1.5

Live Stock.

Steers No 1	8½@
No. 1 Cows and Heifers	7@7½
Hogs 80 to 130 lbs	
Hogs 250 to 350 lbs	7
Calves per lb	4@
Lambs yearlings	6½
Wethers, No. 1,	5@5½
Ewes, No. 1	5@5½

Potatoes

The receipts of potatoes are timely in keeping the meager supply on hand from vanishing entirely. Onions are same in quotations with a firm tone permeating the fairly good business.

Salinas Burbanks ctl	2.50@2.7
Oregon Burbanks	2.25@2.5
Rivers	1.00@1.6
New potatoes	2@

Vegetables.

Asparagus	3@1
Cucumbers, per box	1.00@1.5
Chili peppers green lb	12½@1
Green peas, per lb	1½@2½
Squash per box	1.25@1.5
Onions yellow per crate	2.00@2.5
Onions new per box	60@7
Peppers Green Bell	20@2
Rhubarb, per box	1.25@1.5
Tomatoes Mexican	2.00@2.5
Tomatoes, California	2.0
String beans	4@

Onions.

Onions new box	75@2.0
Onions yellow ctl	2.00@2.5
Onions white ctl	1.75@2.0
Onions, new Reds	1.90@2.0
Onions Brown Australia per lb	3@3½

Citrus Fruits.

Oranges and lemons are inclined to be slow, but they maintain a steady trading at unchanged prices. Quotations on Grape Fruit held fast to a more firmly established trade.

Lemons	1.00@4.0
Navels	1.50@3.00
Seedlings	1.25@1.75
Grapefruit, seedless	1.75@3.00
Limes	4.50@5.0

Fresh Fruits.

Apples are quite plentiful and in excess of the present requirements and apricots are held well in demand at sustained rates. Cherries are more than sufficient to meet the present inquiries, but figures are held quite steadily. Berries show a slight degree of betterment in the demand and the prices quoted are nominally the same. Tropical fruits hold firmly as ever.

Apples, per box	1.50@3.0
Apples, new per box	60@75
Apricots, per box	1.00@1.5
Blackberries, per crate	2.50@3.00
Currants, per box	60@75
Cherries, blk	75@1.00
Cherries, white per bx	50@75
Cherries, per lb	5@9
Gooseberries, per drawer	60@75
Logans, per chest	6.00@7.00
Melons, crate	1.25
Plums, per box	50@1.00
Peaches, per box	1.00@1.25
Raspberries, per chest	12.00@15.00
Strawberries, per chest	8.00@11.00
Strawberries, crate	1.00@1.50

Dried Fruits.

New crop of apricots are quoted at 16 and 18c. Other dried fruits manifest no change.

Apples (evap.)	6½@8
Apricots, per lb new	18@20
Figs, white	4@5
Prunes, four sizes	3@4½
Peaches	10@13
Raisins, seeded (1906)	3½@10
Thompson, unbleached	7½
Thompson, bleached	9@11
Pears	7½@12½

Beans, Dried

Limas, No. 1	4.75@4.90
Pink	2.30@2.50
Large White	2.40@2.65
Black Eyes	4.90@5.00
Red Kidneys	3.50@3.75
Bayo,	2.85@3.00

Hops.

Fancy, 11c; choice, 8@10c; prime, 7@8c; common, 5@6 per lb.

Nuts.

Almonds, new	17½@18
Peanuts, California	5½@6½
Walnuts	12@16

Honey

Clear White Comb	16@@16½
Amber	12@15
Extracted	5@7
Beeswax, per lb	25@30

Hay.

Alfalfa, local	11@13.50
Oat	18@20
Wheat, No. 1	22@24
Wheat, No. 2	13@17

Grain.

Strictly choice wheat is very scarce and what stock there is appears to be closely held in few hands. The millers are not particularly short of supplies, but they are buying wherever and whenever they can pick up any desirable stock suitable for milling purposes. The local market for barley continues somewhat depressed and even the recently reduced figures are inclined toward weakness. Supplies are not heavy and, in fact, the quantity available in this city and nearby places is considerably less than at this time in May.

Wheat, No. 1	1.42½@1.52½
Barley, No. 1	1.20@1.22½
Corn, small yellow	1.55@1.60
Corn, yellow	1.45@1.50
Oats, White	1.55@1.75
Oats, Red	1.60@1.75
Bran, per ton	19.00@20.50
Straw, per bale	.50@.70
Feed Corn Meal, per ton	32.50@33.50
Cracked Corn, per ton	33@34
Oil Cake Meal, per ton	40.00@41.50
Cocoanut cake, per ton	27.50@28.00

Citrus Market

LOS ANGELES, June 5, 1907.

Oranges are going out at this writing at a very rapid rate. The daily shipments are now 50 per cent greater than last year at this time. With it all, a fairly good price prevails. This condition is aided by the weather which has been friendly to oranges, more so than to lemons. The cool weather has kept the fruit in good condition and it has made a fine appearance on the market. If hot weather should be bestowed upon us soon it will cause poor keeping qualities and drive people to lemons. Meantime navels are being cleaned up, only 200 or 300 cars now remaining in California. Another week or ten days will see them all gone. Sweets, Mikes and Seedlings make the bulk of shipments at this time.

Lemons.

Lemons are quiet. They are longing for the frosty weather and other Eastern freakishness to cease. Foreigns are still coming and still selling at a price that is "handing the lemon" to importers. Californias are receiving better attention than foreigns, however, and satisfy the trade which demands it. Phices will rise with the temperature and a good season is promised.

Shipments.

Shipments to date aggregate 21,678 cars of which 2,078 were lemons. To same date last season, 21,478 and 2,451.

NEW YORK, June 3.—The market continues very strong. Forty-six carloads of oranges and one carload of lemons sold today.

NAVELS—

Sweetheart x f H G Fruit Ex	$3.75
Eagle x c H G Fruit Ex	3.40
Gold uBckle x f R H Ft Ex	3.85
Lochinvar x c R H Ft Ex	3.60
Ostrich x f S BFt Ex	2.95
Golden Rule Riv Ft Ex	3.05
Golden Rule x c Riv Ft Ex	3.35
Golden st Riv Ft Ex	2.70
Gold Buckle x f R H Ft Ex	3.80
Lochinvar x c R H Ft Ex	3.00
Quail x c O K Ft Ex	2.35
Blue Jay st O K Ft Ex	2.30
Eagle x c H G Ft Ex	3.15
Cosmos fy S BFt Ex	2.95
Quail x c O K Ft Ex	3.10
Blue Globe x f Riv Ft Ex	3.55
Quail x c O K Ft Ex	2.70
Cosmos fy S B Ft Ex	2.90
Golden Rule x c Riv Ft Ex	3.50
Golden st Riv Ft Ex	2.65
Pointer x c A C G Ft Ex	3.05
Pointer x c A C G Ft Ex	2.35
Parrot x c S A Ft Ex	2.20
Niagara Stewart Ft Co	3.65
Geranium x c C C U	2.35
Partridge x c C C U	2.10
Old Baldy x f C C U	1.95
Aster Rialto C F A	3.05
Aster Rialto C F A	2.60
Fountain ch Speich & Co	2.60
Golden Gate x c Redlands G O A	2.60
Ben Hur x c R H Ft Ex	2.65
Fiesta x c Riv Ft Ex	2.65
Lion Head Lyon &Sons	3.60
Tiger Head x c Lyon & Sons	3.15
Old Mission ch Ch'p'n's Fullerton	2.85
Golden Eagle st Ch'p'n's Fullerton	2.70
Flower fy Upland Dis	2.90

ST. MICHAELS—

Ostrich x f S B Ft Ex	3.70
Mill Creek x c Crafton O G A	3.25
Independent fy Highland Dis	3.45
Stock Label st Highland Dis	2.95

BLOODS—

Golden Rule x c Riv Ft Ex	2.90
Uncle Sam x f Rix Ft Ex	3.25
Fiesta x c Riv Ft Ex	2.65
Stock Label st Highland Dis	2.30

SWEETS—

Golden Rule x c Riv Ft Ex	2.80
Niogora x c Stewart Ft Co	3.25
Solano or r Stewart Ft Co	2.40
Yosemite fy C C U	2.40
Thoroughbred fy C C U	2.95
Old Mission ch Ch'p'n's Fullerton	3.50
Golden Eagle st Ch'p'n's Fullerton	2.80
Carnation x c Moulton & Greene	2.45
Tropical Queen .. M'lton & Greene	2.25

SEEDLINGS—

Blue Print x f Riv Ft Ex	2.45

BUDDED—

Blue Print x c Riv Ft Ex	2.45
Challenge st Riv Ft Ex	2.15
Stock Label st Riv Ft Ex	1.90
Dos Palmos x c S Marino G Pk Co	2.95
Criterion or r Penn Ft Co	2.45
Criterion or r Penn Ft Co	2.75
Tropical Queen st M'lton & Greene	2.25

VALENCIAS—

Bear and Eagle fy T C Ft Ex	3.60

GRAPEFRUIT—

Rialto	3.55

LEMONS—

El Molino	2.35
Independent fy	4.65
Independent or r	3.70
Independent ch	3.70
Stock Label	3.15

NEW YORK, June 3.—Friday, May 31: Twenty-four thousand boxes of Sicily lemons were sold. Neither cargo was good, but the condition of the fruit alone is not enough to account for the decline of 25c per box. Both cargoes contained some invoices of good shipping fruit. The stock sold as follows: Fancy 300s, $3.25@4.05; seconds, $2.50@3.10; fancy 360s, $3.50@4.00; seconds, $2.70@3.10; wasty stock, as low as $1.00 per box. Next sales, Tuesday, Wednesday and Thursday, 110,000 boxes will be offered.

BOSTON, June 3.—The market is unchanged. It is raining. Nineteen carloads sold and fifteen carloads on tracks.

NAVELS—

Jamison fy QC Ex Corona	$3.05
Cosmos S BFt Ex Yerkes	2.95
Cosmos S B Ft Ex Yerkes	3.00
Tunnel S T Ex Fernando	3.20
Urchin S T Ex Fernando	3.10
Rose x f Redlands O G A	4.20

BLOODS—

Partridge	3.10
Old Baldy	2.60
Golden Rule	2.45
Justrite	3.25

SEEDLINGS—

Rossmoyne or r	2.15
Melmose	1.85
Plain	1.35

ST. MICHAELS—

Premium	2.85

LEMONS—

Rossmoyne fy	3.30
Choice	3.10
Goldfinch	2.90
El Modena	2.20

PITTSBURG, June 3.—The market is very strong and the weather favorable. Fourteen carloads of oranges and one of lemons sold here today.

NAVELS—

Golden Rule x c Riv Ex	$3.35
Golden st Riv Ex	2.90
Red C x c Covina Ex	3.05
St Bernard .. Covina Ex	2.80
Blue Jay st O K Ft Ex	2.15
Palm Tree ch A H Ex Prenda	2.35

SWEETS—

Old Oak	3.25
Canoe	2.50

SEEDLINGS—

Carnation	2.90
Native	3.15

LEMONS—

Piute	2.90

PHILADELPHIA, June 3.—The market is firm on good stock and the weather is favorable. Eleven carloads sold.

NAVELS—

B Keystone ch King Ft Co	$2.90
Papoose ch Strachan Ft Co	2.15
Hunter st A C G Ex Glendora	2.45
Hunter st A C G Ex Glendora	2.40
Canyon or r S T Ex Lamanda	2.90
Owl st O K Ft Ex	2.00
Blue Jay st O K Ft Ex	2.05

BLOODS—

Native Son	3.05
Salt Lake	2.75
Canyon	2.90

VALENCIAS—

Triumph	2.60

CLEVELAND, June 3.—The market is very strong and the weather warm. Nine carloads sold.

NAVELS—

California Orange st Riv Ex	$2.50
Royal Knight x f R H Ft Ex	2.55
Ben Hur x c R H Ft Ex	2.35
Pointer x c A C G Ex Charter Oak	2.20
Golden Rule x c Riv Ex	2.95
Golden st Riv Ex	2.05

SEEDLINGS—

Favorite	2.55
Carnation	2.35

ST. MICHAELS—

Pansy	3.40
Golden Strand	3.30

SWEETS—

Pansy	3.15

LEMONS—

Good Selected	3.75
AAAA	3.35
Diamond K	3.15
Swan	3.20

ST. LOUIS, June 3.—The market is weak, on account of condition of fruit. The weather is favorable. Six carloads sold and fourteen cars on tracks.

LEMONS—

El Modena	2.95
Serenade	2.40

SWEETS—

Homer	2.80
Camel	2.65

CINCINNATI, June 3.—The market is advancing. Weather cold. Eight carloads on tracks.

NAVELS—

Grayhound ch S A Ex Claremont	$2.45
Coyote ch O K Ft Ex	2.55

SORE SHOULDERS.

At this season of the year a good many horses are troubled with sore shoulders, necks and backs. It is not surprising as a horse goes into hard work after a winter of comparative idleness, and it is easy to get him out of shape notwithstanding that you take good care of him all the time. A remedy for this very thing will be found in the Security Gall Salve, made by the Security Remedy Company, of Minneapolis, Minn. They claim for this salve that one application will relieve pain from the most severe sores and that it will heal and cure them. This company also makes an antiseptic healer for barb wire cuts which will cure the cuts very quickly. They would like to send a free sample to California Cultivator readers, of their Gall Salve, and authorize us to make the offer, the only condition being that those who ask for the free sample mention the paper when writing. If you have horses that are troubled with sore shoulders or necks don't fail to write them at once, mentioning the paper.

NURSERYMAN HAS A TREE DAY.

J. B. Wagner is original; also grows some original things and sells them. Recently the idea came to him to present everybody a tree. So he advertised that every one who would call at his Pasadena salesyard should have a tree for the asking. He knew advertising paid but when the 3500 people, which he says came, rolled in on him he was surprised, but stood his ground and made good to every caller and Pasadena cars were filled with people lugging trees of all kinds.

Mr. Wagner has supplied several school grounds and public parks with trees without cost.

It is possible he has also sold some trees for we note that he takes an extended Eastern trip this season.

COST OF IRRIGATING.

"There are three essentials to successful farming: Fertile soil, intelligent labor and water in abundance. The first two you have. You do not control the weather. If you did you could double your crop but you might be unpopular. You are no rainmaker. Yet easily and inexpensively you can supplement the rainfall, as far as your land is concerned, from an unfailing water supply."

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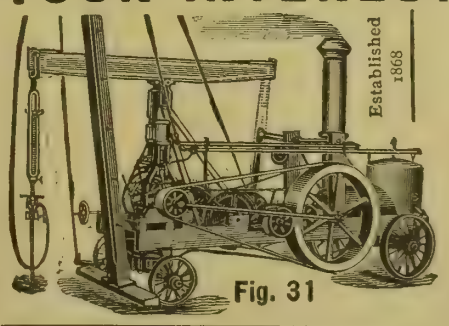

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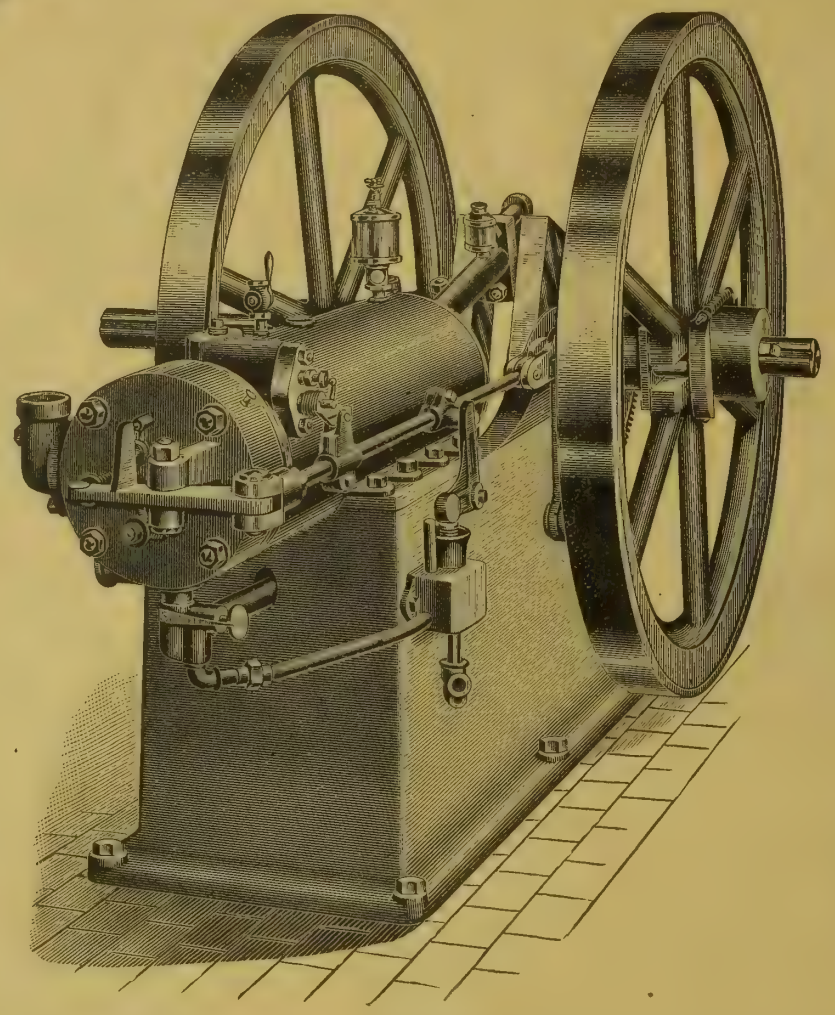

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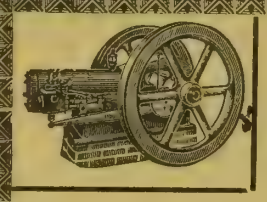

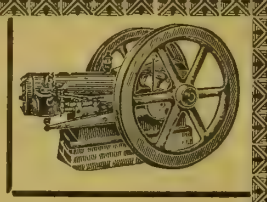

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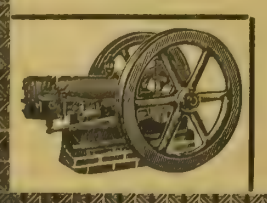

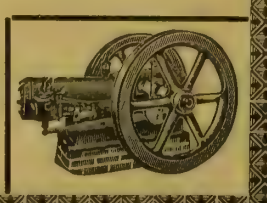

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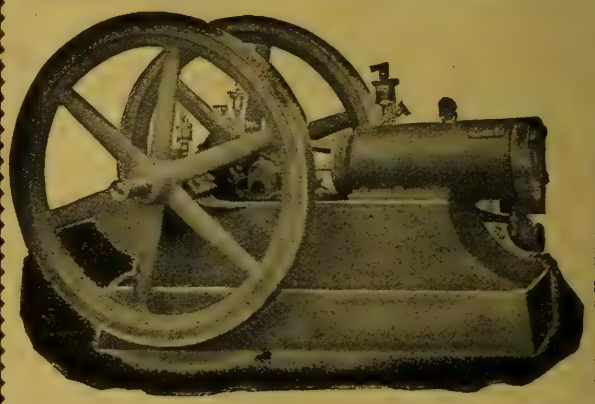

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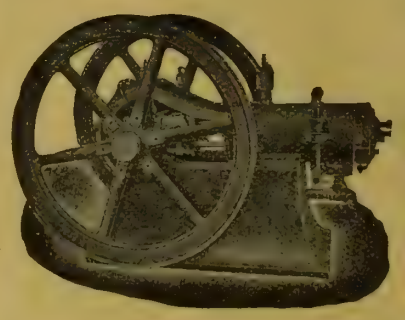

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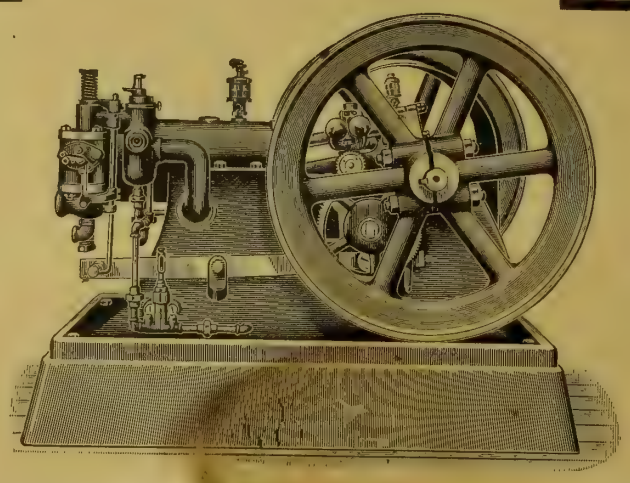

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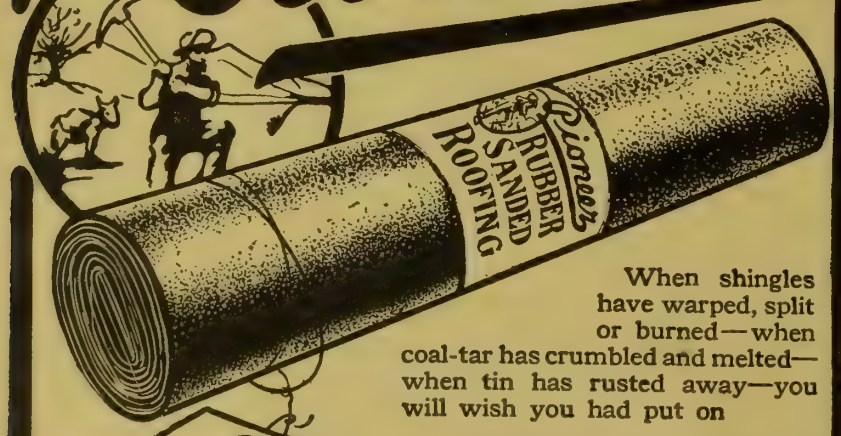

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Vol. XXVIII—NO 24 Los Angeles, California, Thursday, June 13, 1907 Subscription $1 a Year

The Walnut Growers' Institute

A Most Interesting Meeting, with Valuable Discussions on Blight, Cultivation, Irrigation, Cover Crops, and Other Matters of Interest

With Notes by PROF. R. E. SMITH

THE meeting of walnut growers held at Whittier on June 5th and 6th, may be said to have marked an epoch in the history of this industry. The attendance of over 200 growers from every walnut producing section of the State, the earnestness and sustained interest of the discussions, and the generally business-like, serious and straight-to-the-point air of the whole meeting could not fail to impress one familiar with California walnut growing that a long step forward in the progress of the industry will result from this meeting.

Can We Stop the Blight.

The basis underlying most of the discussions, and in fact the original cause of the meeting itself, was walnut blight, the disease which is looked upon as the one great obstacle to walnut culture. Yet, in spite of the acknowledged seriousness of this trouble and the lack of any definite remedial treatment to check its ravages, the pronounced trend of feeling among the growers present was very strongly along two lines:

First, that the walnut industry is by no means crippled or in danger of extermination, but on the contrary is one of the most profitable and promising horticultural industries of the State; second, that the blight is only one of many causes of diminished production, chief among which is a lack of the best methods of intensive culture.

Most noticeable and encouraging of all was the trend of thought of the whole meeting and of every speaker, toward the necessity of better culture, the need of a more extensive and intelligent use of fertilizers and cover crops, the demand for standard and more satisfactory varieties, and the indication in every way that the industry has left the happy-go-lucky, care-free, bonanza stage, and is entering the class of a high-grade horticultural production, with standard, definite established methods and results.

Cover Crops.

The convention opened on Wednesday morning, June 5th, with J. B. Neff, conductor of Farmers' Institute for the University of California, in the chair. Dr. J. A. Osmun, of Whittier, introduced the discussions in a practical way by describing his own experiences in walnut growing and avowing his unbounded faith in the future of the industry. This speaker had found that by the use of cover crops and systematic culture and care, the production of his trees could be largely increased in spite of the blight, and the disease had largely lost its terrors for him.

Fertilization.

The subject of Fertilization of Walnut trees was discussed at length by Thos. Gooch, of Rivera; Ralph McNees, of Whittier and H. E. Collins, of Rivera, as well as many of the audience. The condition of the industry in this particular was made very plain by all these speakers; namely, that the time has come when fertilization of some sort must be resorted to, but that little is known at present as to definite methods or requirements. The use of cover crops was strongly endorsed, and the fact brought out that the growing of such crops in walnut orchards is becoming very general. Peas had been most largely grown, but a tendency in favor of vetch was quite general.

Scientific Work.

The subject of The Practical Value of Scientific Work in the Prevention of Plant Diseases, was handled by Mr. H. J. Ramsey, of the Southern California Pathological Laboratory, in the absence of Prof. E. J. Wickson, who had been expected to be present and speak on this subject. The speaker showed the great practical benefit which horticulture has received in many different ways from scientific research. Mr. E. S. Ware, of Garden Grove, described the rather unpromising results of a long and very carefully conducted series of experiments in the control of walnut blight, especially with the use of Bordeaux mixture. He saw the ultimate solution of the blight problem in the development of immune varieties, an achievement which was already advanced, but urged more complete and thorough investigation of the disease, looking toward a satisfactory method of treatment for the control of the disease in the present orchards. He had found some benefit from the applications of lime to the soil.

Irrigation and Cultivation.

Wednesday afternoon the subject of Irrigation and Cultivation of Walnuts, was discussed by P. F. Cogswell, of El Monte; B. F. Porter, of Fullerton and C. S. Sanderson, of Whittier. The question of the best time for irrigation of walnut trees provoked much discussion and difference of opinion, bringing out a mass of the contradictory experience and opinions which is typical of walnut culture.

The relation of irrigation to "Die Back" was given particular prominence. The fact was considered as established that die back is an effect of climatic and soil conditions, related especially to moisture and temperature. When local conditions and extreme opinions had been allowed for and modified, the practice of heavy winter irrigation appeared to be most in favor under average conditions in Southern California, flooding the ground heavily in January, February or March without much regard to the amount of rainfall. Additional irrigation in June and August found favor with most of the growers, and many believed in still further wetting the ground after finishing the harvest. Most stress was laid on the application in winter of a large amount of water. The furrow-system of application was generally considered most satisfactory.

Walnut Industry Will Prosper.

The speakers of Wednesday evening were F. E. Kellogg, of Goleta, and C. C. Teague, of Santa Paula. Both speakers expressed their substantial faith in the walnut industry and it's future. Mr. Kellogg believed in planting the trees further apart than has been the practice, a view shared by most of those present, advocating a distance of 60, 70 or even 80 feet in squares, planting also a tree in the centre of the square to be taken out as soon as the branches began to touch.

He advised winter irrigation, plenty of fertilizer and the removal of blighted twigs and nuts so far as practical. "Above all," said Mr. Kellogg, "Let me say that the walnut blight does not mean the extermination of the walnut industry or the ruin of our growers. Blight or no blight, the walnut industry is today one of the most prosperous and one of the most hopeful horticultural industries of Southern California." Mr. Teague expressed an idea which was generally concurred in, that the trees which come out latest in the spring are the least affected by blight, and suggested the possibility of maintaining a growth late in the fall and corresponding late coming out in the spring, by means of irrigation. He saw a great future in the growing of the walnut in California, and had confidence that all problems and difficulties would be met, as they always have been in other similar cases.

A general expression of opinion was called for as to the comparative merits of the seedling and grafted tree. Considerable discussion followed, in which the opinion was almost unanimous in favor of the latter.

Possibilities of Improvement.

On Thursday morning Mr. L. B. Hogue, of Santa Paula, called attention to the variation in seedling trees in respect to productiveness and quality as well as blight resistance, and suggested the possibility of breeding up an improved variety by successive selection and planting of nuts from the best trees in each generation.

Prof. Smith Says Sprays Don't Pay.

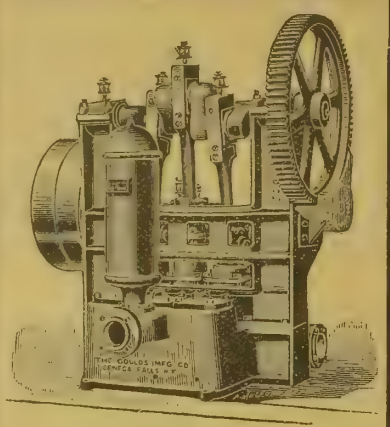
Prof. R. E. Smith followed, on the Experimental Work on Walnuts of the Southern California Pathological Laboratory. Extensive spraying experiments with Bordeaux mixture, lime salt and sulphur and other fungicides had given very unpromising results. The same was true regarding "dust spray." As a result of all his experiences and observations the speaker had come to the conclusion that very little was to be hoped from spraying by any method, on account of the expense and impracticability of the operation on walnut trees. Under the head of cultural methods the use of fertilizers and better culture were discussed. In this direction there seemed to be much promise, and experiments were being conducted by the laboratory on a considerable acreage of walnuts in the use of different fertilizers and combinations.

The speaker believed that if we must lose a certain per centage of nuts by blight, it is certainly better to lose it on 200 or 300 pounds per tree than on 30 or 40. Blight treatment might save the affected nuts, but only good culture can increase the actual crop which the tree sets, and in this direction there are greater possibilities of increasing the crop than in blight control.

Blight Resisters.

Special emphasis was laid on the prospects of securing blight-resistant varieties and the practicability of re-forming the industry along such lines. The speaker believed that the day of the grafted tree had come and that the general planting of seedlings was a thing of the past. The best variety or varieties might not have yet been found, but as a general proposition the seedling grove was doomed to be superseded by grafted trees. The best seedling might be good enough, but the average one was not. The grafted tree makes it possible to have the average as good as the best. The different varieties

Concluded on Page 620



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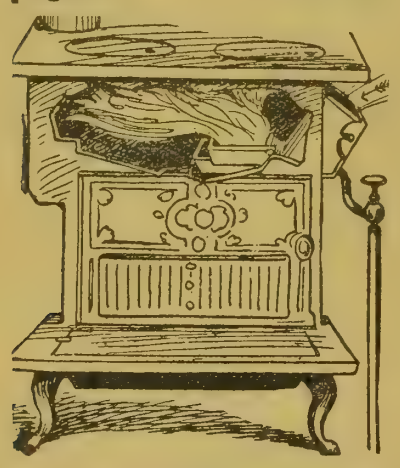

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Deciduous Fruit Culture

WALNUTS.

IT WAS one time thought that the overproduction of walnuts in California would soon be realized, but from various causes it has proven a false conjecture, just as the hue and cry of overproduction of oranges was once sounded.

The falling off in production is no doubt due to a number of causes, but the chief cause is no doubt due to the blight. We have often been asked which is the best variety to plant. Taking all things into consideration, this is a hard question to answer. There are one or two varieties that are practically free from blight, but so far as known, they are not prolific bearers in Southern California. Were this not the case, there would be no doubt what variety to plant. There may be some varieties brought out in the near future that will give entire satisfaction. At present, the most widely tested variety that is in the lead is Placentia Perfection. It is not blight-proof, in fact, is very susceptible to blight during the early life of the tree, due to its rank growth. It is known that disease that works through the sap, works most rapidly when the sap is flowing most freely. The Placentia nut thus affords a good chance for the development of blight, but it is only during the early growth of the tree. As a prominent grower once remarked, "I would not think of planting a variety that was not a good grower, even if it did not get set back with the blight."

The tree that is naturally a rapid grower will in the long run make the best tree.

One way to lessen the ravages of the blight is to plant the trees a long way apart. It is quite well known that old groves of large trees are more badly affected than are young groves. The latter get the most sunlight and this is undoubtedly the reason. Where there is abundant sunshine all during the early spring growth of trees and nuts, the blight does less damage than when the weather is cloudy and damp. This is evidenced during seasons of abnormal sunshine and with late blooming varieties. Herein lies the key to the most practical solution of the blight question. When some variety is developed that will not put out its leaves and blossoms till the season favoring the development of the blight is past, then we will have disposed of the present form of blight.

Fortunately, the walnut is capable of being grafted, even when quite old, making possible the conversion of large areas of walnut trees when such a nut is developed. This is not a groundless hope, but one very likely and without doubt a sure development. The fact that varieties now exist that lack but one requirement, that of productivness, shows what is coming. In the meantime plant that variety which produces the most merchantable nut in paying quantities.

FERTILIZING WALNUTS.

I am a walnut grower and interested in the manufacture of commercial fertilizers. A combination that one would naturally suppose would put me in a position to give light on this subject. I and a few other men I know are fertilizing our groves with some success, but I have not yet determined enought to say to you, do this or do that. However, I have determined this much: that you must fertilize your trees if you expect to keep up the yield to a paying basis. Why a man should fertilize his orange grove, lemon grove or truck patch and stop short on his walnut grove I cannot see.

Return What You Borrow.

If you can produce a good crop this bogie man, the walnut disease, will have very little terror for you. You are removing from 500 pounds to 2000 pounds of nuts per acre per year and the constituents of the crop must be returned, or sooner or later exhaustion of the soil will result. A thousand pounds of nuts removes from the soil 8.18 pounds of potash; 1.56 pounds of lime; 1.47 pounds of phosphhoric acid and 5.41 pounds of nitrogen. You cannot rotate your walnut crop and relieve the pressure so to speak that way, therefore you must return the plant food sold off in the crop by commercial fertilizers, adapting the formula to your specific soil and conditions, supplying the humus by stable manure or cover crop.

Stop one minute and consider why it is that one piece of land will produce more nuts per acre than another; this condition may exist and often does in one man's grove; the reason for this is that the piece of soil that produces the most nuts has those elements of nitrogen, phosphoric acid and potash in abundance and in the forms best suited to produce large crops; whereas, the other piece is deficient in these elements, therefore less crop is the result; is not this conclusive evidence that fertilization is necessary.

Smith All Right.

Prof. Smith, of Whittier, who is doing excellent work towards solving the walnut problem, said to me about the "disease." The remedy lies at the roots of the trees; produce more nuts, then you will notice the disease less. Notice again the outside row of your groves where they have plenty of room to feed and, as a rule, plenty of food, and you will see more nuts per tree; again, a lone tree will yield phenomenally, taking into consideration light and air as imparted-factors; yet at the same time we must credit the amount of food with some of the results.

Don't Worry.

Do not get discouraged about the walnut business. I have seen groves that had plenty of "dead tips" brought back to their pristine condition with fertilizer. Do not look for immediate results; remember the nuts you will harvest in the fall of 1908 are now in an embryonic state and have been since the trees first started to make wood this spring. Unlike an orange that makes a blossom or fruit growth in the spring on wood made the preceeding summer, the walnut makes its fruit buds for next year this spring, therefore give your fertilizer, whatever it is, a chance; remember fertilizer in the ground is not in the tree, it takes time for the process of absorption and dissemination through the tree structure to take place.

Watch Them Grow.

I would not plant trees closer than 50 feet, many advocate even 60 or 70. Fertilize and study your soil and tree growth. What might prove beneficial for you might not give your neighbor such good results. Get your fertiizer on early in December if possible. Keep it up like you do on other crops and you will say there is money in walnuts at one ton per acre.—H. E. Collins before Walnut Growers' Institute.

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Plants and Seed for sale in any quantity. Warranted the genuine article. Orders filled promptly

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General Agriculture

OUR MOST DESTRUCTIVE RODENT.

THE U. S. Department of Agriculture will soon issue Farmers' Bulletin 297, entitled "Methods of Destroying Rats," prepared, under the supervision of the Chief of the Bureau of Biological Survey, by D. E. Lantz, Assistant Biologist. The topic is of perennial interest, and an infallible method of exterminating these rodents would be worth more to the people of the United States in a single decade than the Department of Agriculture has cost since its establishment.

One rat is much like another so far as destructiveness goes, but it is of interest to note that three kinds have appeared in this country, all immigrants from the Old World. The black rat was the first to reach our shores, which it did nearly three hundred years ago. The common species, known as the brown, or Norway, rat, arrived about the year 1775 and at once proceeded to drive out its weaker rival, until almost everywhere it has supplanted it. The third species, known as the roof, or Alexandrine, rat of Egypt, is a great mariner and infests every ship; hence, naturally it is common along our coast, especially in the South.

All rats are dangerous foes, but the brown rat is the worst mammalian pest in existence and in the United States destroys more property than all other noxious animals combined. No statistics of the actual damage annually done by these rodents have been gathered in America. In Denmark the loss is put at $3.000,000 a year, and in France the damage by both rats and mice has been estimated at $40,000,000 annually. A single rat will consume about 2 ounces of wheat or corn a day, and it destroys far more of the latter than it eats, as indeed it does of most other food. The average cost to the country of feeding a rat on grain is about 50 cents a year. If for each cow, horse, sheep and hog on the farms of the United States the farmers support one rat on grain, the toll levied on the cereals by these rodents would reach the enormous total of $100,000,000 a year. Even granting that half their food is waste material, the tax of feeding rats is still an enormous drain on the profits of agriculture.

But much of their food is more expensive than grain, and the actual losses due to these animals are by no means confined to food. They enter stores and warehouses and destroy dry goods—lace curtains, carpets, woolens, silks—as well as kid gloves and other leather goods. They gnaw through lead pipes, flooding buildings with water or filling them with gas. They injure furniture and the foundations and doors of buildings. They eat the insulation from electric wires, thus causing diastrous fires. The average fire loss in the United States due to defective insulation is placed at $15,000,000 annually, a considarable part of which is said to be caused by rats.

Rats destroy eggs and young poultry, pigeons, game birds and wild song birds. They have been known to kill young rabbits, pigs and lambs, and even to attack children. Carl Hagenbeck once lost three young elephants because rats gnawed their feet, inflicting incurable wounds.

In addition to the direct damage they do, rats are known to be active agents in carrying disease germs from house to house and from city to city. Bubonic plague is usuallly disseminated from port to port in this way.

Their prolificness is the chief obstacle to their extermination. They produce young from three to six times a year, and females breed from about three months old. The average litter is about ten, but often it numbers fourteen or more. If three litters of ten each are produced every year, a single pair, breding without check and without losses by death, in three years would be represented by ten generations and would number 20,1ɔɔ,392 individuals. The eleventh generation, due at the beginning of the fourth year, would number over a hundred millions.

The world has been fighting rats for several centuries, but the warfare has been neither systematic nor persistent. The number of "infallible" devices and formulas for killing the rodents that have been put forth would fill volumes, and still the pestiferious rat survives and grows more and more cunning as the devices for its destruction gain in ingenuity.

The Biological Survey does not pretend to have worked out an infallible device for killing rats by wholesale, but the methods for their destruction given in the bulletin are those which careful experiments have shown to be the best, and the formulas for poisoning and trapping are the most approved ones. Particular emphasis is placed on the rat-proof construction of buildings and on organized co-operative efforts to destroy the animals.

The bulletin will be furnished free upon application to the United States Department of Agriculture or to Senators, Representatives and Delegates in Congress.

VERMONT'S CROP OF MAPLE SUGAR.

The National pure food law is working wonders for the maple sugar producers, acting largely as it does as a guarantee of the purity of the products offered as genuine maple sugar and syrup. Vermont is the chief sugar-producer, and it is estimated that in that State the total output will reach 20 millions of pounds of sugar and syrup combined. The general price for the genuine article during the last few years has been from 8 to 12 cents; and now, with the increased demand for it, owing to the probable purity of all that is offered, the crop is bringing from 15 to 20 cents per pound. At 15 cents per pound the maple sugar crop of Vermont will amount to about three millions of dollars in value.

ROAD-MAKING IMPLEMENTS.

State Engineer Nathaniel Ellery has consented to conduct an exhibition of practical road making at the Fair Grounds for the benefit of Supervisors, Roadmasters, and others interested during the next State Fair, Sept. 2, 1907, and anticipating that manufacturers of the necessary implements will be glad to supply the same and help to operate them, as they do for these exhibitions in the Eastern States, the Society offers special prizes for such implements in operation.

The Farmers' Institute at Pomona will be held June 28 and 29.

The Government Makes Butter

ALBERTA, Canada, is one of the best dairying countries in the world.

The Government has done everything possible to encourage the dairying industry, and the result is that hundreds of dairy farmers are getting rich at the business.

In order to stop abuses and insure a steady market and favorable market conditions for the dairy farmer the Alberta Government has established numerous creameries. These creameries are conducted on the most economical plan, and the cost of producing and marketing butter has been reduced far below the cost to private concerns.

The farmer takes his butter fat to the Government creamery and receives ten cents a pound down upon delivery. As soon as the fat has been turned into butter and sold he receives the balance due, after four cents a pound has been deducted by the Government to pay the cost of producing and marketing the butter.

Of course, if any farmer or any private company desires to make butter there are no restrictions, but the Government can do the work so much better and for so much less cost that it pays no one to try to compete.

Dairying is only one of the lines that can be made profitable to the farmer.

Alberta is the best live stock country on the American continent. It is also a great cereal country, and all kinds of vegetables can be raised there.

The great irrigation project now under way near Calgary is destined to increase the production of the naturally rich soil many hundred per cent. Land under this great ditch will afford ideal farming conditions. If the farmer wants to raise live stock as well as crops of all kinds, grazing land can be secured in connection with irrigated land, and these combination farms will permit of diversified farming that is very profitable.

The man who is looking for a new location or an investment cannot do better than to visit Sunny Southern Alberta. Full information as to how to make the trip at very small cost, how to secure as good land as lies out of doors very cheap, and on the easiest of terms, will be sent upon application to

Canadian Pacific Irrigation Colonization Company, Limited,
60 Ninth Avenue, West, CALGARY, ALTA., CANADA.
Sales Department Canadian Pacific Railway, Irrigated Lands. 7

Richest Farm Lands In California

Are those found in Kings and Tulare Counties, where sugar beets, alfalfa and fruit return immense profits.

Dairying

proves highly remunerative and stock raising is better than banking. These lands are selling for $25 to $30 per acre. Profits follow improvements. Over $1,500,000 invested on lands owned, sold and developed by this Company.

Corcoran

The center of this tract of wealth, is a magic town, provided with every advantage of railroads, water and electric lights, and is a marvel for its age.

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Everything is in the Roll

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REX FLINTKOTE ROOFING

is much higher in quality and a little higher in price than the "next best." Those who cheerfully pay the price are first absolutely convinced of the quality. Let us convince *you*.

SEND FOR FREE SAMPLES AND BOOK

The book will tell you all about REX Flintkote Roofing, and the samples will show what it really is and enable you to test its properties. "Look for the Boy."

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19 India St., Boston, Mass.
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Lost Strayed or Stolen—One Cow

That is about what happens each year for the man who owns five cows and does not use a **Tubular** cream separator. He loses in cream more than the price of a good cow. The more cows he owns the greater the loss. This is a fact on which Agricultural Colleges, Dairy Experts and the best Dairymen all agree, and so do you if you use a **Tubular.** If not, it's high time you

did. You can't afford to lose the price of one or more cows each year—there's no reason why you should. Get a **Tubular** and get more and better cream out of the milk; save time and labor and have warm sweet skimmed milk for the calves. Don't buy some cheap rattle-trap thing called a separator; that won't do any good. You need a real skimmer that does perfect work, skims clean, thick or thin, hot or cold; runs easy; simple in construction; easily understood. That's the **Tubular** and there is but one **Tubular,** the **Sharples Tubular.** Don't you want our little book "Business Dairymen," and our Catalog A. 260 both free? A postal will bring them.

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Reliable Family Cows
Established 1876. Take advantage of our years of experience. Correspondence solicited.
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OF REGISTERED JERSEYS
FOR SALE—RICHLY-BRED YOUNG bulls from cow having High Official Yearly Records. Also a few heifer calves of best breeding. For particulars address
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As we have dispersed our herd, except a few heifers for home use, we are forced to offer for sale this valuable sire. We will sell him at a low price to a breeder who is in a position to give this bull a chance to make a record.
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Young Stock For Sale.
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Live Stock and Dairy

CALIFORNIA DAIRYING.

[The following is an address given by Mrs. Sherman at the recent Farmers' Institute and Basket picnic, held at the California Polytechnic School, San Luis, Obispo. It contains so much that is good that we give it this week in place of her regular article.—Ed.]

TODAY is a play day, a picnic, the best work we do is our play; when we play we are learning rapidly the joy of being with our fellow men. It is the union of minds that strength comes, so that in the anticipation of pleasure we grow in strength. Now if you will rise to the fact that the only happy people in the world are those that work; their hearts are full of joy, of light-hearted joy, then we may make the most of this day together and all go home believing in sympathy as the key to knowledge and the open door to all hearts.

The Country.

God made California a wonderful country; the blue of the skies is more intensely scintillating blue than other skies. The mountains are high and fringed with foothills that in other countries would be called mountains. Great valleys are irrigated with snow-fed rivers. These valleys have only lately been redeemed from dryness, indeed, much of the San Joaquin was considered desert land. This land has been redeemed from aridity by the utilizing of the water that used to run in great floods to the sea. The beauty of the wild flowers that carpet the plains in the springtime has been made an all-year-fiesta by the gardens of the horticulturist. In truth, the desert now blooms like a rose. The effect of all this beauty is showing on the children, on the home life and it has touched the dairyman until he is thinking of improved stock and of making his barns and corrals neat. He is desiring to have his cows a credit to him rather than something he hopes the neighbors will not see as they pass on the road.

Ideal Life.

In California the ideal life will some day become the natural life when we are wise enough to stop and live, instead of constantly rushing and grasping for money. When we come close to Nature for knowledge, this will be the home for poets and thinkers. It is the destiny of the people to develop a high civilization on the Pacific Coast. The dreamy plains with the clear starlight nights and long, bright days, turn the thoughts toward Diety, while on the coast the restless sea that booms and breaks eternally, awes with its resistless powers.

The gloomy fastness of the mountain heights and great depths of the canyons all are sources of wonder to the mind trained to appreciation. I have impressed with the resistance of the mind to adverse conditions in the unattractive homes of the children of our foreign classes. They become apathetic and have to be aroused to the knowledge that flowers will grow anywhere and that vines will clamber as gracefully over a rough board shack as over the finest of pergolas.

When we are conscious that our surroundings are as we make them—beautiful or folorn, it becomes apparent that we must make our work our happiness or we will never have any in this world.

Character of Country.

The coast lands of California are broken by few bays; it is a land of little frost and is well-watered by rain in the winter and in the summer the cool, soft gray mist drifts in from the ocean. The interior valleys are cooler in the winter and warmer in the summer. They have distinct seasons. Yes, they are sunny in the summer with a soft, dry heat that is delightful. The foothills are full of good grazing during the wet season. Then they become parched from the pitiless sun beating on them and the reflection from the mountains that tower over them.

Surely, in all this range of country with its varying natural feeds there is room for every breed of dairy cows! The cow is naturally at her best in the most home-like surroundings. Dairy cattle are man made and all have been made to produce by selection of the best individuals from generation to generation.

Breed and Feed.

Breeding is of great value at first. Later, feeding becomes equally as great. It is the man's business to grow and to feed that which his land will produce in the largest measure. The home of the cow really expresses the conditions better than the word environments. Now we can improve the cow's home as much as we improve our own; the cow needs shelter during the rain storms as much as we do. She needs to be fed regularly when not on good pasture. She needs to be milked at regular hours. She needs to be kept clean, free from lice and ticks and to make milk fit for human use; she should be kept from manure. She should have fresh water and wholesome food. Put yourself in the cow's place and make her bed sweet as your own and her feed and water as perfect.

Which, then, is the greater, the surroundings of the dairy herd or its blood lines? I do not know. Take the finest dairy cows in the world and under scrub conditions and in ten years they will become degenerated. Take scrub cows feed them liberally and they respond to a certain limit at once. Take pure-bred stock that is run down and they can be brought back in a couple of generations to better things. But I would rather not have to do it.

Tersely put, the successful dairyman wants dairy-bred cows, good feed and best of conditions and he will have financial success.

Failures.

There would be fewer failures if the conditions of animal life were better understood. The wise way is to experiment and prove in a small way before going into it in a larger way. The dairyman that does not love cows had best stop dairying at once for he is merely a drag on the industry.

There are born failures that should never work for themselves but always be under others' directions. If you have been one of them people take the little word "now" for a mot-

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CAUSTIC BALSAM
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Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.
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Every bottle of **Caustic Balsam** sold is Warranted to give satisfaction. Price **$1.50** per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address
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Will Cure
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Works like a charm on all kinds of cuts, burns and sores, raw, running or ulcerated.
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IT HEALS THEM ANYWAY
IN HARNESS, UNDER SADDLE OR IDLE
IF NOT SOLD IN YOUR TOWN WE WILL SEND YOU
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Put up in 25c, 50c and $1.00 Cans
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Thoroughbred Jersey Cattle
Berkshire Swine
Young Stock For Sale
Santa Ana Car to Lugo.

to and stop being a failure at once. "Failure is a habit—ask any banker! Guarding against disaster is a habit, as much as getting drunk." Success is in the blood of the successful master as well as in the blood of the cows.

Diversity of Breeds.

What is a breed? It is a race of animals made by the selection along the desired lines for generations, by carefully mating the animals that have the desired qualities, and weeding out those that are not up to the standard of or true to the type that the breeder has in his mind. Not only must the qualities be in the individual; they must be so fixed that they will be transmitted every time when mated with an animal of equal excellence. The calves of the best cows are selected each time and the physically perfect and strong only are raised. Then the strain is improved. The old way was to aim at nothing in particular, beyond the individual cow, so that the calves were raised, registered and passed out, whether worthless or not. The advanced registery where the cows have to perform as well as exist is rapidly changing this.

Every day more and more cows are being developed into great performers at the pail. The grade cows of the various breeds are showing great cows. These have not had a chance to win prize money. The Holstein Association now has an ammendment to its by-laws to be voted on this month, in effect that the association will offer money prizes for records of grade cows when made under the regulation that apply to registered cows.

[Concluded next week.]

A WOMAN FARMER.

The Press, Cleveland, O., says: "One of the greatest farmers in California is a woman. Twenty years ago, as Miss Minnie Eshelman, she went to 'Frisco and bought a big ranch, and although without previous experience, she made a success of farming from the very first year. She is now the wife of a physician, Dr. Sherman, and manages every department of her business. She has a large herd of Holstein cows, many of which have made the best records in the State. Last year the herd made a net profit of $500 a month. She has 250 acres in grapes and is a large winemaker. Her profits from this branch of the ranch last year was $13,000. Mrs. Sherman employs fifteen to twenty hands all the year round and, during the busy season, her force is often as high as fifty men. Mrs. Sherman is devoted to her husband and family, is a forceful writer and a great worker in all matters of charity and is greatly beloved by the people all over the State."

We think one or two statements above are not strictly correct. For instance, we think Mrs. Sherman, instead of being a "large winemaker" is a shipper of large quantities of table grapes.

However, it calls attention to the fact that a woman can assert her rights and do things and compel people—even some men—to sit up and take notice. As far away as Cleveland is, they have heard of Mrs. Sherman and her work. Cultivator readers hear of her and read of her work from her own pen each week.

The writer has been driven over her place by Mrs. Sherman and can say that much is to be learned by seeing her methods of work and how she accomplishes results.

Mrs. Sherman is one of those writers who gives good advice and at the same time maintains a place which is a credit to her neighborhood.

"Faith and works" go hand in hand on Minnewawa ranch.

CHARCOAL FOR SWINE.

Where hogs are kept in confinement it is noticed that they crave foods like charcoal, ashes, rotten wood, etc. It would seem as though such foods were of little value, for when analyzed they show but slight quantities of nutrition. Yet these foods are found to be excellent correctives for the hog's system, especially where large quantities of corn are fed.

The following method is advised by a noted hog breeder for making charcoal out of corn cobs. Dig a hole in the ground five feet deep, one foot in diameter at the bottom, and five feet at the top of the charcoal pit. Take the corn cobs that have been saved in a dry place and, starting a fire in the bottom of this pit, keep adding cobs so that the flame is gradually drawn to the top of the pit which will be thus filled with cobs. Then take a sheet-iron cover, similar to a pot lid in form, and over five feet in diameter, so as to amply cover the hole, and close up the burning mass sealing the edges of this lid in turn with earth. At the end of twelve hours you may uncover and take out a fine sample of corn cob charcoal.

It is a good plan to mix about eight pounds of salt to six bushels of cob charcoal, two quarts of air slack lime, and one bushel of wood ashes. Break up the charcoal so as the ingredients will become mixed thoroughly. The mixture should be placed where hogs may partake of it at their pleasure.

One of the hardest propositions with which sheepmen of the West have to contend with is making the long shipment from the mountain country to market, especially in the fall. At this season most of the consignments consist of lambs which are taken off green feed. They were put on the cars with the only chance of getting anything to eat at the regular feeding stations. They are given dry hay to which they are not accustomed and they do not take to it readily. It is bad enough when the railroads get the cars through on schedule time, which they rarely do, but when vexatious delays occur it is worse. The result is that lambs, though fat at the start, lose much of their plumpness before they reach market, but there seems to be no help for it.—The Ranch.

A drove of cattle crossing the bridge at Yuba City last week by some means were stampeded, when about the middle of the structure eight of them took a high dive into the river, 20 feet below.

Corn stalks are valuable fodder for sheep, and if cut green and properly cured, and then put through the shredder, there should be but little waste.

Keep a sharp lookout for anything wrong; find the cause and right it at once.

Give some oil meal with the grain ration. It is good for the digestion.

It is well to keep sheep in lots of fifty each.

Delays are dangerous with a flock.

One ram to fifty ewes.

Cream Separators, all sizes, all prices. O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

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It is getting **hot;** you need a **cooler.** Write us for prices. Cream Separators, Simplex Combined Churns, Pasteurizers, Ripeners, Engines and Boilers. We supply everything used in a Dairy, Creamery or Cheese Factory.

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3 Bowls in 1

The important thing for you to be **sure** of before you put any money into a cream separator is that it is a **clean skimmer.**

Now every mechanical cream separator has a **bowl** which does the skimming. But the Improved

Only 2 Parts Inside

U. S. CREAM SEPARATOR

has **3 bowls in 1!** (the picture will show you). Every drop of milk run through a U.S. is skimmed **3 distinct times.** The remarkably thorough separation for which the U. S. Separator is famous is due to this exhaustive process and the wonderful skimming efficiency of the two simple corrugated cups. The U. S. has held the **World's Record** for clean skimming since 1901.

Cream **is** money. The U. S. gets more than any other separator.

Now, we have n't room here to explain **all** about the clean skimming of the U. S. or about its many other fine points. But if you want, we'll be right glad to mail you a copy of our big, handsome, new catalogue **free.** It's mighty interesting and tells **all** about the U. S. Just say "Send catalogue number **B 20** ". A postal is all right if it's handiest. Better write now while you think of it, addressing

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

Prompt deliveries of U. S. Separators from warehouses at Auburn, Me., Buffalo, N. Y., Toledo, O., Chicago, Ill., LaCrosse, Wis., Minneapolis, Minn., Sioux City, Ia., Kansas City, Mo., Omaha, Neb., San Francisco, Cal., Portland, Ore., Sherbrooke and Montreal, Que., Hamilton, Ont., Winnipeg, Man. and Calgary, Alta.

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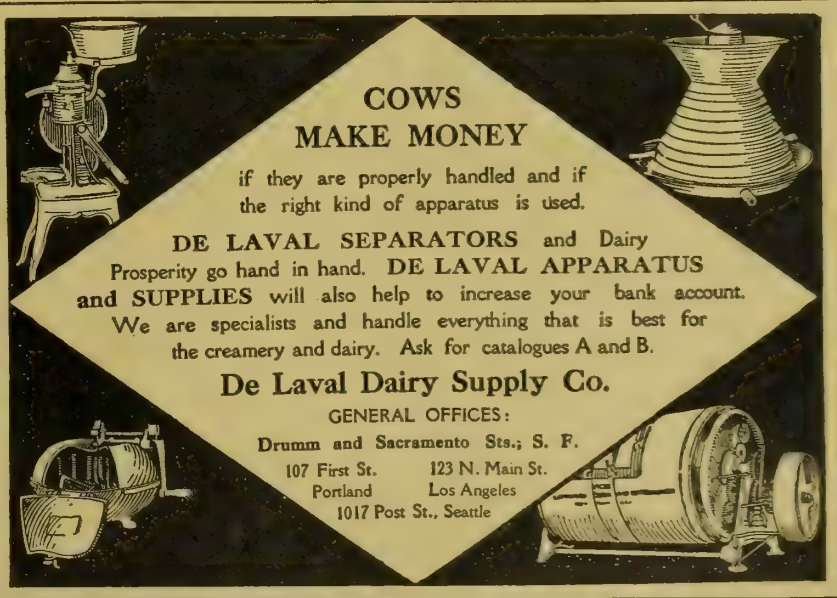
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if they are properly handled and if the right kind of apparatus is used.
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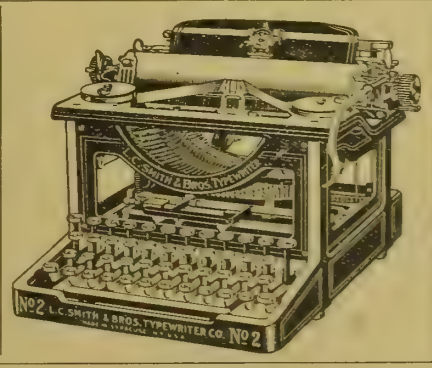

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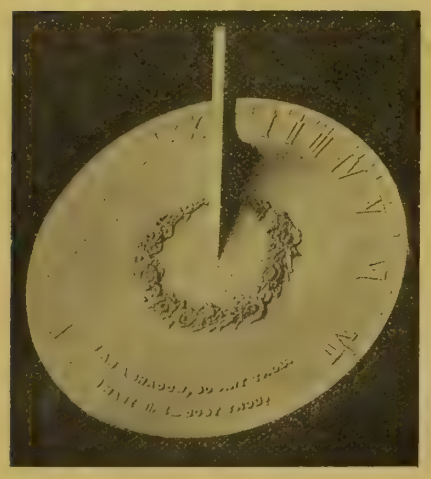

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The Ornamental Garden

YANG TAU.

AT THE last State Fruit Growers' Convention, held at Hanford last December, Prof. P. H. Dorsett exhibited various plants recently imported and now being tested at the United States Plant Introduction Garden at Chico. Some of these promise much of advantage in the short time which they have been observed.

Amongst these was the Yang Tau, a vine introduced from China. It is a beautiful vine and with that advantage bears a delicious fruit. It has not yet fruited in this country, but we now note in the Sacramento Union that the vine has this spring blossomed and now promises fruit for this season. Some of these plants have been distributed from the Chico station and two in a Los Angeles garden, show most beautiful foliage. The Union says:

There is joy at the National Plant Introduction Garden, located at Chico, and the superintendent and his associates feel sanguine that they will soon add another desirable fruiting plant to the number already growing in California. The cause of this elation is the recent development in the vines of the Yang Tau, a Chinese climbing vegetation sent to the garden two years ago, and which has since been watched with interest by the officials. The vines are now covered with two or three hundred flowers, and the expectations are that they will bear this year. The fruit is a sort of berry resembling a prune in size and shape and is highly prized in China.

As stated, the vines were first sent to Chico from China two years ago, along with some samples of the berry, which were placed in alcohol and are now at the garden. The first year good growth was made in the lath house in which they were planted. The second year the garden officials fully expected that blossoms would appear, and they were greatly disappointed when they did not occur. The present full bloom is therefore doubly satisfactory to the experts.

The growth in the two years has been such that the vines are now about an inch thick in the stalk at the base near the floor of the lath house, and a large portion of the roof of this place has been covered by the spreading, clinging shoots.

The flowers somewhat resemble an apple blossom, but are not constructed the same. They are pure white and about two inches across. The roof of the lath house is very striking, and it is said that even if the berry proves a failure in this country the vine with its flowers is ornamental enough to warrant its extensive planting. The flowers grow singly or in twos and threes.

There are two varieties of the Yang Tau at the garden, and both are covered with the blooms.

While the berry of the Yang Tau is most highly prized in China, it is not known what its value commercially will be in this country, but if prolific in bearing some use will undoubtedly be found for the fruit. In China it is preserved or easten fresh. Its size warrants much body to the single berries, and in time the Yang Tau may become one of our staple products.

A little elbow grease is worth a lot of oily phrases.

NASTURTIUMS.

The nasturtium is one of those annuals which should have a place in every garden no matter how large or how small. Anyone can grow them with perfect success, even a small child large enough to dig a hole and drop the seeds.

They possess every good quality which goes to make a perfect bedding plant, bearing intensely bright and beautiful flowers borne in the greatest profusion the whole season; not troubled by insects, thriving in poor soil and standing dry weather with impunity. There are few gardens where the beautiful nasturtiums do not prove one of the greatest successes and favorites for annual cultivation. If they were expensive luxuries, difficult to grow they would rival our choicest exotics. Their cultivation is simple as I have said, but I shall give a few points to insure success. An ordinary garden soil is best, not too rich, as then you would have more foliage than flowers; they will blossom profusely on poor soil, where scarcely anything else will thrive; still a happy medium is the best to strike. Loosen the soil well. Sow the seed in rows if tall, or masses if dwarf, and cover with fine soil the depth of one and one-half inches. Allow plenty of room, as the plants must not be crowded, if you desire them to become bushy and strong Do not allow the soil to become packed before the plants are out of the ground, but after budding commences do not stir the soil any more. Care must be taken to pick all faded flowers from the plants to have constant blooms until frost comes.

Sometimes nasturtiums are troubled with the cutworms, so if suspected they must be killed. The tall growing varieties should be planted for climbing over fences, rockeries, trellises, etc., while the dwarf kinds are the best for bedding, bordering, etc. I shall have a bed of gladiolusses this coming season with dwarf nasturitums for a border.—Deseret Farmer.

PLANT GROWS WITHOUT WATER OR EARTH.

Mrs. Wm. H. Grissim has a peculiar plant. It is called "Asia," and is a bulb which grows absolutely without water or earth. The bulb sits in an ornamented dish and from a small size has grown to a height of two feet. It has also put out a pretty blossom with a large leaf, the latter resembling the lily in form and shape. —Santa Rosa Republica.

VALUABLE REPORT.

The annual report of the California State Board of Trade, made at the annual meeting to the members of that organization, representing every section of California, gives some very interesting information concerning the resources and possibilities of the State, recent developments, and future requirements, in order to make the natural resources still more available, and incidentlly gives a summary of the work accomplished by the State Board since the last report was submitted.

The State Board has been able to pursue its work during the past year in spite of the diaster which befell San Francisco and which affected the entire State. The State Board had just completed its plans for renewed and greater efforts to meet the conditions which seemed to warrant the expectation of a more active movement of homeseekers and investors toward California than ever.

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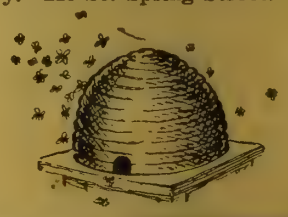

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The Vegetable Garden

POTATO POINTERS.

THE writer is in receipt of a letter asking for certain information with reference to the conditions of seed and fertilizing matter in the production of maximum crops of potatoes. Touching upon the first point, the following experiments, conducted at a number of the American experiment stations, will be of interest:

First—An increase in seed within ordinary limits produced marked increase both in total yield and marketable yield.

Second—An increase in seed from one eye up to a half potato produced an increase in the net value of the crop. But the increased yield from the whole potato and from the half potato is not sufficient to cover the cost of the greater amount of seed.

The comparison of the half potato with two eye seed shows that:

First—For total yield (large and small) of ninety-five experiments, seventy-six are in favor of the half potato and nineteen in favor of two eyes.

Second—For marketable yield, that is a total yield less the small potatoes, of seventy-three experiments, fifty-eight are in favor of the half potato and fifteen in favor of the two eyes.

Third—For net marketable yield, that is, marketable yield less the amount of seed, of thirty experiments twenty-three are in favor of two eyes.

Fourth—For net value of the crop, that is, value of the crop less the value of the seed, of thirty experiments, twenty-two are in favor of the half potato and eight in favor of the two eyes.

The comparison of the whole potatoes with the half potatoes shows that:

First—For the total yield of fifty-four experiments, forty-six were in favor of the whole potato and eight in favor of the half potato.

Second—For the marketable potato, of forty-two experiments, thirty-six were in favor of the whole potato and eight in favor of the half potato.

Third—For the net marketable value above the seed, of thirteen experiments, seven are in favor of the whole potato and six in favor of the half potato.

Fourth—For the net value of the crop, that is value of marketable less the value of seed planting, of twelve experiments, seven are in favor of the whole potato and five in favor of the half potato.

Summary.

This is a summary of all the experiments conducted along this line by the American Experiment Stations up to and including 1893. I might also add another experiment made by the Utah Experiment Station which showed in a four-year experiment comparing small uncut potatoes with cuttings of equal weight to large potatoes that there was little difference in yield. The Wyoming Experiment Station determined that the total yield of potatoes from small, whole seed was greater than from cuttings, but the percentage of marketable potatoes was less. I think that we can summarize this matter by saying that the results of the station work have shown that good-sized whole potatoes have yielded much more of the total crop than cut seed and there has been nearly a uniform gradation in crop as to size of the seed passed from good-sized whole potatoes through small potatoes, halves, quarters, three eyes, two eyes, and one eye, but that with the whole potato, the marketable percentage of crop has been less than in the case of cut seed.

As to the second point, in large potato producing sections, where the supply of stable manure is limited, good results are obtained by the use of about 1500 pounds per acre of commercial fertilizers. Where the physical condition of the soil is poor, it it highly recommended to plow under a crop of clover, peas or other legumes and to apply 1200 to 1500 pounds per acre of a high-grade fertilizer, carrying all three of the elements essential for plant production, namely, phosphoric acid, potash and nitrogen. Even where the stable manure is used it is advisable to supplement it by the use of phosphoric acid and potash, inasmuch as stable manure is essentially a nitrogenous fertilizer and is lacking in the mineral elements mentioned above. In any case, an excess of either stable manure or fertilizers should be avoided, as it tends to produce an overgrowth of vines, thus excluding the air and sunlight and favoring conditions which invite attacks of potato blight.

A fertilizer which has given universal satisfaction is made up as follows:

Acid phosphate	600 lbs.
Nitrate of Soda	180 lbs.
Sulfate of potash	120 lbs.

On soils which are rich in organic matter the amount of nitrogen may be decreased and potash increased to 180 pounds with advantage. The first formula will correspond to 3 per cent. nitrogen, 8 per cent. of available phosphoric acid and 6 per cent. of potash, and should be used at the rate of from 1000 to 1500 pounds per acre. It goes without saying that to obtain the best crop the soil should be kept in physical condition conducive to the access of air and sunlight to render available all of the plant food possible.

GEORGE WRIGHT.

NO RULE FOR CUTTING SEED SPUDS.

L. D. Gale in an article in the Denver Field and Farm makes strong points in favor of cutting seed potatoes so as to give sufficient nourishment to the young, spouting plant. He says:

People who sell machines for planting potatoes well understand how farmers differ in their methods of cutting seed. The machine for cutting potatoes was really the outgrowth of a demand for seed-pieces of uniform shape and size to work in planters. Most of these machines slice or chop the potato into pieces. In some sections many farmers are greatly pleased with them and give them almost unqualified praise. Others are disappointed. The seed-pieces will not sprout and there are many misses in the field. The reason for this is quite easy to understand when we realize what a potato is and how its early growth is made. The eye or bud from which the little plant grows must be strong and vigorous and should have with it enough of the flesh of the tuber to support it until feeding roots are well formed.

Now if all varieties of potatoes were alike in shape and vigor, so that the eyes or buds were evenly distributed over the surface we might have a single rule for cutting seed and in most cases a machine would do fairly good work. We all know that tubers of varying types differ both in number and vigor of the eyes. Take, for example, a tuber of the Rural New-Yorker type. This is a round or chunky potato. The eyes are apparently well distributed, but when we sprout the tuber we find that only a few stronger buds at the seed end will sprout. The others are mostly blind eyes, which will make but feeble if any growth.

In a long and narrow potato, the buds are also well scattered and if we sprout a tuber, we will find good growths starting out all over it. The life of the tuber does not all go into a few strong buds at one end, but almost any eye is sure to make a plant. It is easy to see from this that there can be no fixed rule for cutting seed potatoes. In cutting the long, narrow type of potato of fair size, quarter it by cutting lengthwise and then slitting each long piece in the middle. Some growers would cut still finer by halving at least two of these quarters. We do not like such small seed pieces, especially for early potatoes. With potatoes of the Rural and Carman types it is better to cut through lengthwise and then each half in the same way.

Thus each seed piece carries at least one strong eye from the seed end. With smaller tubers we would cut once lengthwise and plant half the tuber. When a man undertakes to cut up a tuber of the Royal type in a machine, he will find that twenty-five or thirty per cent of the seed-pieces will fail. They are large enough, but the eyes are feeble, and if they start at all will make poor plants. Last year, a good deal of our seed was cut by new hands and we made a general rule for cutting lengthwise as with the round or chunky type of spuds, two or four pieces as the size of the tuber warranted. The trouble with long and slim potatoes when cut in this way is that the seed-pieces are so narrow that they break too easily. They give poor satisfaction when used in a planter, especially the crisp and dry varieties. Let the grower cut one or two different varieties and sprout them carefully and he will be surprised at the variation in the strength of the eyes.

SOIL FOR THE GARDEN.

The necessary requirements for growing good vegetables are proper soil, good seed, thorough cultivation, and careful attention. The soil for most vegetables should be of a sandy nature with a good sub-soil for drainage. A soil of this nature is especially adapted to such crops as spinach, lettuce, radishes, cucumbers, beets, celery, tomatoes, and early cabbages while a heavier soil with a clay sub-soil is best for such crops as onions, late cabbages, early celery and summer lettuce. The light, sandy soil can be cultivated much earlier than the heavier soils and will produce two or three crops each season while the heavy soil in most cases produces only one. Good stable manure has proved to be a complete manure, but if a second crop is to be grown on the same land an additional ton of some special fertilizer, suitable to that crop, is often necessary. But after all, the growing of all crops depends more on the man than on anything else.

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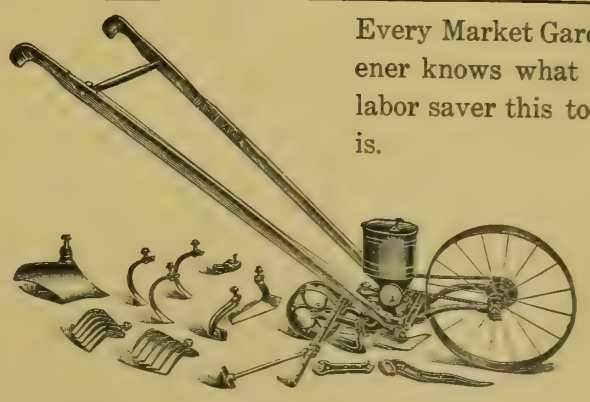

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1¼ inch	3c	per ft.
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4 inch	5c	"
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4 inch	6½c
6 inch	8½c
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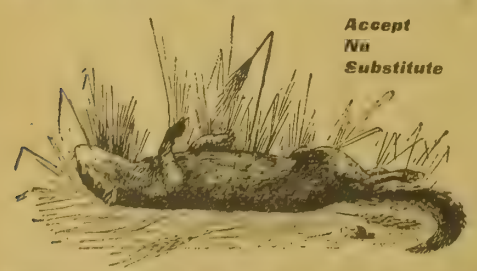

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California Horticulturally

GRASSHOPPERS DESTRUCTIVE.

FRESNO reports grasshoppers as having appeared in destructive force again, and as threatening great damage to the vineyards and orchards in the vicinity where they have appeared. We have outbreaks of these pests every year in some portion or other of the State, but they rarely appear in destructive numbers two successive seasons in the same place. We shall always hear of them so long as the uncultivated foothills furnish them with breeding places, but as these breeding grounds become circumscribed, the swarms will lessen and their damage be reduced. Fortunately the destructive work of these swarms is even now confined to limited areas and is growing less. In the early history of California grasshoppers swarmed over the whole State but, as cultivation broke up their breeding grounds they have been driven back and back, until now they are confined largely to a few sections immediately aligning the foothills where the land is never disturbed by the plow, and they find a hard gravelly soil, with gentle slopes to the south or west, and here they still hold to the cost of the neighboring fields. The damage done by them is during their larger hopping stage, when they are partly grown and have exhausted the food supply of their hatching place; they then hop off into the adjoining fields and do great damage before their wings develop. When they acquire wings they soon fly off, and spreading over a wider area, their destructive work is apparently lessened.

LIGHT FRUIT CROP THIS YEAR.

Authentic reports now coming in indicate that there will be a shortage in the output of most of the deciduous fruits this season. Apricots especially, will be very short. The apricot is a very uncertain bearer and rarely gives a full crop oftener than once in three years, but is rarely a total failure two years in succession. Last season and this, however, have been almost failures, so far as this fruit is concerned. Cherries are now in the height of the season and are yielding fairly well, although not a full crop. Peaches are doing much better than they did last year, but still the crop will fall below normal. Pears are doing better, but the blight has reduced the output very greatly. On the whole, the outlook is for a better yield of fruit than we had last season but still for anything but a good crop.

RED SPIDER PREVALENT.

Very many complaints are being received concerning the increase in red spiders and the consequent damage done by this pest. Red spiders always appears in great force at the approach of warm, dry weather and at such time does its greatest damage. It is a pest, not alone of certain kinds of orchard trees, as almonds, (upon which it is terribly severe) prunes, orange, etc., but it is equally a pest on a great variety of greenhouse stock and is found on very many plants in the open, where conditions are favorable for its spread. The only remedy to be advised, and that not altogether a satisfactory one, is dry sulphur. This should be dusted over the affected plants; best if they are slightly moist so that the sulphur will adhere to the surface. The fumes arising from the sulphur, when it gets warm, have a destructive effect on the spider and will greatly reduce its numbers.

OLIVE OIL AND LONGEVITY.

Captain Diamond, of Berkeley, who claims to have attained the advanced age of one hundred and eleven, ascribes his unusual accumulation of years and good health to the continuous use of olive oil. He states that he has used olive oil in large quantities ever since he was twenty-four, and that with the proper use of olive oil one can be cured of almost any form of disease. One of the stock prescriptions of medical men for gall stones is a copious use of this article, and in the remarkable Berkeley man, who has lived so far beyond the common run of mankind, and claims that he will reach the two-hundred mark, the medicos have good support for their remedy, and olive oil should have a boom from both sources. There is little question, however, that there is no more healthful article of diet than olive oil, and proper diet is the best of medicine.

PEACH BLIGHT DECREASING.

It is gratifying to note that from later reports which are still coming in, that the peach blight, which was so prevelant and destructive last season, and from which so much was dreaded for this, is decreasing. It has made its appearance in a few locations, but not nearly in so virulent a form as last year. This was to have been expected, as this disease is of fungus origin, and dependent largely upon climatic conditions for its spread, and as these conditions are seldom two years alike, so this disease will rarely be destructive for any series of seasons.

PEST SEASON NEARLY OVER.

The season of abundant pests is now nearly ended, and while there still remain enough to worry the producer, still they have reached the climax and are now on the decline. The latter part of May is the worst portion of the year for insect pests. It is then that cutworms are doing their greatest damage, when grasshoppers are traveling forward into the orchards and fields and when all kinds of aphids appear in swarms on various forms of vegetation. As the hotter weather approaches the cutworms become moths, the grasshoppers acquire their wings and fly away and the plant lice are killed off to a great extent. Still we have all these pests in swarms long enough to do vast damage, and it is well to be prepared for them another season, bearing in mind the experience of this. Precautionary measures may be taken against all. Thorough cultivation, clean culture, the plowing up of their breeding grounds will do much to check the cutworms and grasshoppers, two of the worst of our pests, while the spray outfit should be in readiness for the aphids as soon as they appear in the spring. Thorough winter spraying with salt, sulphur and lime will do much to check them. Precautionary measures are too apt to be overlooked and we act like the Arkansas fiddler with his house, when it rains we can't fix it, and when it don't rain it don't need it.

With the Citrus Growers

CITRUS PESTS.

THE question of pests is one that confronts every orange grower that operates in any country that grows oranges. The pests that infest some countries are practically the death of the industry until some means are discovered which will eradicate them. These hang like a cloud over the heads of some growers. Were it a fact that the orange pests attacked oranges only, these dire enemies could easily be quarantined against. But some of the worst will thrive on almost any kind of a plant. For instance, the cottony cushion scale seems to like some of the wild shrubs that grow in the dry arroyos, as well as it does the orange. Were it not for the Vedalia, the orange industry would not be where it now is in California.

The Black scale is the most universal bad pest that the California orange grower has to contend with, but its habits are of such a nature that it is easily controlled when systematically handled. Had this insect wings it would not be so easily handled, but still it would not be as bad as some pests. It does not injure the interior of the fruit to any perceptible degree and the injury done to the exterior is soon eliminated by proper and timely action. Still this is our most expensive orange pest, when taken as a whole. It has, as far as established at the present time, no effective natural enemies in the chief orange growing sections, that will hold it in check sufficiently to allow the disuse of mechanical means of combating it. There are but two orange tree pests in California that are held in check by natural enemies to such an extent that they are of no concern to growers, and those are the cottony cushion scale and aphis. The great hopes of orange and other fruit growers are the introduction of parasites that will prey on the pests to their practical annihilation. These hopes may be vain hopes. We have had many failures to one success. In this line of thought we will refer to a recent interview with a special traveling correspondent of the largest daily newspaper in Melbourne, Australia. He is intimately familiar with agricultural and horticultural pursuits in Australia and says that once given a start in that country, pests of all kinds multiply and increase with amazing and startling rapidity. While there are one or two exceptions, it is generally conceded that in order to keep the various pests within bounds, it is necessary to keep "maneuvering away" by some mechanical means. It does not pay to depend on natural enemies.

He also remarked that should the Fruit Fly find its way into California, it would knock our fruit industries "sky-high." It is the most destructive pest known to the Australian fruit grower. You pick a peach or orange, thinking you will have a refreshing bite, but find you have bitten into or opened a wiggling mass of nasty worms. The Mexican orange worm is not to be compared with it. We are told that all efforts to combat it have failed utterly. It has no settled habits and propagates from one year's end to the other. When growers find their fruit infested with the worms, their only alternative is to burn the crop. Imagine what would become of our fruit industry in California should this pest gain a foothold here.

The White Fly has made orange growing unprofitable in certain parts of Florida. This travels by wing from place to place and is a sucker in the truest sense of the word. They will swarm over the orange and extract the juice of the fruit (not only of the rind) so that the fruit is worthless. One bad feature of the pest is, that it attacks various varieties of plants. This insect has been the dread of California orange growers, so much so that the southern counties have quarantined against all kinds of Florida plants. Word has come that this pest has at last gotten to the Pacific Coast and is found in one section of the northern citrus belt. Active steps have been taken to eradicate it, and it is hoped that those in charge of the work will be successful.

COVER CROPS FOR COMBATING GUM DISEASE.

The success which has attended the efforts of those who are combating gum disease of lemons by cleaning away the soil so as to expose the original buds and keeping the ground well worked and soft about the base of the trees seems to indicate that these are the primary methods of control to which disinfection of affected parts and even cutting away of gummed bark are secondary, though perhaps necessary. The growing of cover crops is a great aid to both of these operations aside from their value in the control of brown rot.

It is generally acknowledged that the gum disease appears most frequently on trees in low places washed by irrigation and rain waters, especially the latter, in such a way as to build up a desposit of soil about the trunks which covers the collars. This condition also prevails often on heavy soils where too much of the plowing is toward the trees and settles there baking hard and becoming permanent during the dry summer months. Again it often occurs where the trees are budded too low or are improperly planted, leaving the collar so low that it is covered at the first cultivation. A good stand of cover crop during the months in which rain occurs will entirely prevent washing and thus eliminate the first and most important source of this evil. The value of cover crops in keeping the soil open and porous is too well known to require discussion. For this purpose leguminous crops are of course preferable since their roots not only open the soil in such a way as to give a better circulation of air but also supply nitrogen, a much-needed element.

In securing results in the control of gum disease it is necessary to get a growth close to the trunks of the trees where many cover crops fail to grow owing to the shade of the foliage. Opinion differs as to what legume will grow best in these places. Some favor vetch and others burr clover. The evidence is quite contradictory and it seems that the two are about equal in this respect, and when carefully and thoroughly sown to the very base of the trees will give a good growth even on the heavier soils most addicted to gum disease. The vetch produces a more spreading-root system than clover and also gives a greater number of nodules on the lateral branches. It therefore appears to be rather more desirable for keeping the soil porous and for a better distribution of nitrogen nodules.

In removing this crop in the spring it is generally necessary to use a hoe or similar hand-tool to reach under the trees, and if this be kept sharp the vetch or clover can be cut a little below the ground line leaving the roots to rot and furnish mulch, at the same time aiding the cultivator in keeping the soil soft and porous.—B. J. Jones.

CITRUS FRUITS IN LOUISIANA.

From a recent report of the Louisiana Experiment Station we extract the following, giving their latest experience with citrus fruits:

We have continued our growth of citrus fruits, enlarging the number of varieties, which this year have suffered very markedly from an attack of scale insects and the White Fly.

The method of spraying for the extermination of the scale insect, which has proven efficinet in other sections, is here complicated with another problem, namely, the control of the small ant that has become so numerous in the vicinity of New Orleans. These ants carry the insects and replant them on trees after they have been sprayed, and thus vitiate the results of spraying. We are now making arrangements with the Crop Pest Commission to carry on in co-operation with them some investigation looking to the control of this pest under the new conditions. It is to be regretted that the funds of the station will not permit the employment of an entomologist to devote his time to the study of the ant, as this insect is proving a great annoyance to all housekeepers in the infected territory and will probably become a menace to our orange groves, and possibly to our sugar interests. Our hybrid oranges fruited to a large extent this year, though likewise suffering from insect attacks. The object of experimenting with these hybrids is to see if we cannot get an edible orange that will withstand our coldest weather here without protection.—Florida Agriculturist.

A live saint needs to wear no symbol.

Vacaville shipped ten cars of deciduous fruits, principally cherries, by express.

Gold Medal Citrus Trees

Are fully described in our treatise of Citrus Culture, which is a trifle the best thing of its kind ever published. Contains about 50,000 words and 100 illustrations telling about oranges and lemons from the seed bed to the bearing orchard. Price 25 cents. Remember we are the largest producers of Citrus Trees in the world and stand ready to serve you with the finest nursery stock that can be grown. Correspondence invited.

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WHITE FLY NEXT WEEK.

On learning of the White Fly on the orange trees at Marysville, Prof. C. W. Woodworth of the State University, proceeded to that place on investigation bent. Closest examination has convinced him that California has a true case of Alyrodes citri or Florida White Fly.

Many photographs were taken and a complete report compiled which is now being published by the State University.

The professor on visiting this office has granted to the Cultivator the use of his negatives from which cuts will be made and used with an article in the Cultivator next week.

FARMERS FORMING UNIONS.

On the front page of the Cultivator this week is a striking illustration of the independent condition of the American farmer today. He is shown to be beseiged by Wall street gamblers who desire to purchase his products, that they may create a corner on the commodities of the world's market. To their appeal he turns a deaf ear and in quiet confidence assures the invaders of his agricultural realm that he is quite independent of their attacks. The illustration is interesting, for it represents a general existing condition throughout the country. The farmer is coming at last to realize that he and not the Wall street speculator, holds the key to the prosperity of the world in the domain of agriculture.

Heretofore the farmer worked and worried, and the speculator garnered the profit of his toil. Drouth and insect pests, the extortion of the trusts were all for the farmer. The speculator profited quite as well when conditions were adverse for the farmer as when they were prosperous. It made no difference to him. It made no difference to the trusts.

The farmer worked from daylight until dark one year and the next year, while his life lasted. At the end, he had little more than at the beginning. On his rare visits to town he had the pleasure of looking at the palaces, yachts, automobiles and private cars built by speculators and middlemen from the profits of corners made on the products of the farm. Up to within a half dozen years the farmer had nothing whatever to say about the price he was to receive for what he had to sell. But today he nas. He is understanding his importance more and more—thanks to such leaders as Secretary Wilson, and the organizers of the Grange. He is getting a better knowledge of his importance as an industrial factor in the commerce of the nation.

Under an enlightened system of co-operation he has begun to realize what he can do.

In the industrial world this co-operation is called a UNION. No matter under what name it goes it is simply co-operation for mutual protection against the Wall street gamblers.

We are glad to be able to tell our readers that the farmers have made up their minds to put this system into operation, and that they have gone to work intelligently.

There are two great organizations of farmers in the country, both based upon a determination to give to the man who takes life's necessities from the soil a fair return for his work.

To this end, the work has been already begun in the farmers' organizations. The Cultivator congratulates the farmers, and greets as public benefactors the moving spirits in the great farmers' organizations.

The farmers of the country are the backbone of the nation. They develop the nation's real wealth, which is the wealth of the soil. They are entitled to a full share of that wealth and of the national prosperity. By combination, by insisting on fair prices for their wheat and their other crops, and by refusing to sell the non-perishable products except for a fair price, they have already added tens of millions to the annual return from the farms. They will add tens and hundreds of millions more annually as their unions increase in power.

THE WALNUT INSTITUTE.

The institute held at Whittier last week, confined to the discussion of the walnut industry, was attended by a very large number of growers from many counties in Southern California. We doubt if a more interesting institute, or one productive of greater beneficial results, has ever been held in this State.

Every feature of the industry so far as it relates to irrigation, cultivation, grafting, blight, die back, together with discussion of disease preventatives, was thoroughly gone over by experts. Of course there was a diversity of opinion on every topic discussed, but one feature impressed us which the readers of the Cultivator will be glad to note, and that was that in Prof. Ralph E. Smith, Supt. of the Pathological laboratory, the State has secured a most valuable instructor.

It is our firm belief that under his instruction, California will ere long be relieved of many of the serious conditions which have heretofore confronted growers along various lines of fruit and nut culture.

A GREAT CONGRESS.

The National Irrigation Congress which convenes at Sacramento September 27 next promises to be a record-breaker, so far as strong delegates can make it so.

The President of the Congress, Governor George E. Chamberlain of Oregon, has written to the Governors of the sixteen western States and territories which come under the provisions of the National Reclamation Act inviting them to be present and especially urging the importance of the presence of the executives or all these States. Governors of other States have also been or will be invited to attend and several are expected to come long distances for the purpose of attending and participating in the Congress.

The management announces a magnificent list of handsome and valuable trophies, comprising no less than sixteen handsome gold and silver loving cups especially designed and manufactured for the occasion and offered for interstate competition by prominent men and business houses of California and other States.

WALNUT GROWERS' CONVENTION.

Continued from First Page

now in existence were discussed, and the fac brought out that several kinds of good quality and decided blight resistance were already in existence.

The French varieties and several local nut were discussed and specimens exhibited. It i very necessary to remember that productiveness quality and other features are fully as importan as blight resistance. In regard to the presen acreage the possibility of top grafting to bette kinds was taken up, and the results of experiments and observations cited which seemed t show much hope in this direction.

Grafting.

The latter subject was continued in the after noon by Messrs. McNees, of Whittier and Crane of Santa Paula, together with Geo. Weinshank of Whittier, who had much experience and suc cess in this work. The best results had been ob tained by grafting wood not over 3 inches i diameter, and entirely new tops had been put o large trees in 3 or 4 years. The possibilities i this direction were quite a revelation to most o the growers, who had come to believe that walnut tree could not be grafted.

Root Stock.

In a general discussion which followed on th most desirable root for grafting nursery trees considerable difference of opinion resulte among the nurserymen present, owing largely no doubt, to the uncertain parentage of many o the so-called native or black walnuts. While al agreed that the black walnut root is far superio to the English, the comparative qualities of the California and Eastern black were a subject of much difference of opinion. It was apparent however, that much of the stock in use consiste of hybrids between different species and where definite information was available it seemed tha a hybrid root between the two black species o between the black and English gave the best re suits.

Mr. Taylor, of the F. W. Braun Co., Los An geles, spoke briefly on some experiments con ducted by himself in the control of walnut bligh by spraying. The results were not at all en couraging and he believed that the most promis in overcoming the disease lay along the line o increasing the crop by fertilization and bette culture and in securing immune varieties.

A Blessing to the Industry.

Mr. C. C. Chapman, of Fullerton, made a strong and interesting talk on the stability and prosperity of the walnut business in spite of the presence of the blight. Mr. Chapman believed that the disease was actually a blessing to the industry, in forcing it to seek general improvement and organization. He advocated strict attention to the best methods of intensive culture heavy fertilization, especially with phosphates o which he would use 75 pounds per tree each year, heavy winter irrigation, pruning out al dead and weak wood and an early cover crop o vetch in winter. He had great confidence tha every obstacle would be overcome, as they ha in every other of our horticultural industries.

Finally, Brethern.

If any general conclusions on walnut culture may be drawn from the whole discussion of the convention, they are something as follows The best variety to plant is not well established and probably not the same for all sections, bu plant grafted trees of what seems from all the information procurable, to be the best available kind for the section. The greatest immediate advance in walnut culture will probably be in the demonstration and multiplication of varieties Graft on roots from California-grown seed, of large black walnut trees or hybrids. Plant the trees in orchard not less than 50 feet apart o 60 feet in squares with a centre tree to be taken out later. Grow crops between the rows very sparingly if at all, and never for more than a very few years. As the trees grow older fertiliz liberally and grow a cover crop each year. I blighted twigs appear, keep them cut out a long as this is feasible. On bearing trees irri gate heavily in winter, except on land containin much moisture, and more lightly in June an just before and just after the harvest. Fertiliz heavily with phosphates, (40 to 75 pounds pe tree) and some nitrogen; put in a crop of vetc as early as possible and plow it in early an deep. Use all the stable manure possible. Kee all dead and weak growth cut off, and the tree pruned up from the ground enough to work un der them conveniently.

Next Year.

The convention adjourned on Thursday after noon, after voting enthusiastically to hold a sim ilar meeting next year.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

The total rainfall at Highlands during the past year has been 25.01.

The bee men around Hemet report a very fine crop of honey this year.

Barley is being received at Imperial warehouses in large quantities these days.

The Escondido Times reports the trial of a milking machine, which was entirely successful.

El Centro reports quite a storm of wind with some rain. Some barley was slightly damaged.

Imperial realty sales are looking up since the assurance that the Colorado river can be controlled.

Mr. Ray Trussell of Escondido has purchased a fine Jersey bull from the Tribble Brother's herd at Elk Grove, Cal.

Three trainloads of cattle arrived within two days last week at Imperial for fattening on the pasture lands in that vicinity

Redlands has a large output of fine black sage honey, which has, however, been somewhat decreased by continual cloudy weather.

Riverside Artesia Water Co., has struck a fine flow in a new well which has been increased by the installing of a Pomona pump.

The vicinity of Mound near Ventura has a live farmers' club, which hopes to have Conductor Neff hold a farmers' institute in the near future.

John Muir, the naturalist, visited Riverside last week. In an interview he unqualifiedly endorsed the efforts to reforest the California watersheds.

The grain crop at Canejo is reported heavier than anticipated earlier, as the cool moist days have given better opportunity for the maturing of the crop.

The people of Corona are swinging into line with an annual cleanup. Dead weeds and unsightly things along the street being compelled to give way.

The directors elected at the annual meeting of the Celery Growers' Association, held at Smetzer last week, were: W. H. Bentley, J. T. Shaffer, W. H. Chilson and D. E. Ford

The bean crop of Ventura county is looking more and more promising. The lima crop will be equal to that of last year, while blackeye beans show a material increase in planting

The Oxnard Courier reports that beets in that section will be one of the heaviest crops ever. This is notwithstanding the fact that the worms got in their deadly work and reduced the acreage very materially.

Mr. Geo. A. Smith, the creameryman of Corcoran, purchased two carload of registered Jersey and grade Jersey cattle around Elk Grove recently. This was the finest lot of cattle that has ever been assembled at the Elk Grove strock yards.

The Colorado river, which caused much anxiety along the levees above Imperial, reached its high water mark, 27.9 feet, last week. It has now receded slightly, and fears of trouble are practically passed. The cold wave which passed over the East and North is given the credit.

HORTICULTURE.

Corona olives promise a big crop.

The peach crop at San Fernando will be a large one.

Japs have planted over 700 acres to strawberries near Monrovia.

One cantaloupe grower at Brawley has fifty acres of early cants.

Berkeley capitalists are purchasing orange land at Arlington Heights.

Shipment of cantaloupes in carload lots began at Brawley the first of this week.

San Dimas claims and has the largest lemon packing-house in the world.

Apricots are two weeks earlier than last year in Santa Ana, and are now being sent to market in large quantities.

Apricots are ripe a month earlier than any season yet at Hemet. Pickers are at work getting the fruit ready to can.

High Grove and West Riverside are scrapping over which locality shipped the first apricots. May 20th is claimed as the date.

The grape crops in Cucamonga and Etiwanda are reported exceptionally fine. There are about 16,000 acres of vineyards in these two sections.

Coachella Valley makes the claim that its oranges will be so early that they will be able to demand $7.00 per box, for early December market.

The closing of the orange season at Riverside finds the growers claiming that it has been the most profitable season ever given to them.

The material shortage in the fruit crop of Ventura county and lack in the hay crop, it is hoped, will be made up by the heavy bean and sugar beet crops.

The Santa Paula olive growers are enthusiastic over the new olive oil mill, which it is hoped will be established there. It will have a capitalization of $500,000.

Imperial has a cottonwood tree from a cutting planted a year ago last March, trunk of which is eight inches in diameter, and the tree twenty-three feet high.

Mrs. J. C. Graham of Paradise valley brought to San Diego market the first wagonload of ripe pears on June 7, that sold for 7½ cents per pound to the Julian Produce Co.

Professors Steubenrauch and Eustis of the Department of Agriculture, visited San Dimas packing-house last week in their work of investigating the decay of oranges and lemons.

Ripe apricots were selling at 8 cents per pound on market of San Diego on June 7 from the ranch of Henry Johnson of San Pasqual and the Graham orchard of Paradise valley.

The big Limoneira lemon ranch near Santa Paula has been enlarged by the acquiring of Olivelands ranch. which adds to that already magnificent property 2300 acreas of highly improved land.

The walnut growers of the State held an enthusiastic meeting at Whittier last week which was so beneficial that a unanimous resolution was made to hold another, one year from that date.

Northern California

AGRICULTURE.

Six to eight dollars per ton in the field is the price of hay near Yuba City.

Salinas claims the erection in the near future of a $250,000 cement plant.

The Fresno fair hangs in the balance, as the lease of the ground has expired.

Winters has an improvement club which insists on people cleaning the roadways.

Twenty-four cents per pound is being paid for wool at Yuba City and Marysville.

"The country where farming pays" is what the Sentinel dubs the Hanford section.

Twenty draft horses were purchased at Woodland last week for shipment to Dawson.

Sonoma County Pomona Grange was entertained by the Bennett Valley Grange last week.

Farmers are suffering from a dearth of laborers in Sutter county, $2.25 and board being offered.

Trustees in Levee District No. 9, in Sutter county are asking for bids for improving their levees.

Of twenty-eight homing pigeons released at Roseburg, Ore., two have arrived in their home in Visalia.

Bee men in the neighborhood of Hanford, say that they have the finest prospects for a big honey crop.

Turlock Journal says Turlock Irish potatoes will be an article of commerce for they are the "finest on earth."

Directors of Levee District No. 1, near Marysville, expect to raise the levees of that district before another season.

Corcoran is swelling with importance over the fact that a $1,000,000 beet sugar plant is promised in the near future.

The levees and the canals in Fresno county are patroled night and day for fear that spring floods may cause serious breaks.

Siskiyou county had some good old-fashioned thunder storms with a cloudburst last week. The rain continued all the afternoon.

Three refrigerator cars of butter and eggs was sent to Los Angeles from the neighborhood of Hanford this week. Hanford must be some on butter.

San Joaquin county claims to plant 7500 acres to beans this season, about 1700 less than last year. This is caused by the excessive floods on the Delta lands.

Farmers of Turlock held an interesting institute under the direction of Prof. Fowler last week. One of its most interesting features was an address by Prof. Bioletti.

The State Veterinarian, Chas. Keane, of Sacramento, visited Tulare last week. There is a movement in that section to have the quarantine from that county raised.

Wheatland, known as the great hop center, is making herself a reputation as the producer of fine stock. One ranch recently shipped five carloads of cattle from that point.

HORTICULTURE.

The smallest ever is the prediction for the apricot crop this year .

Sixty-five dollars per ton is being offered for blackberries at the Sebastapol cannery.

The canning season has opened in Fresno with the canners paying $60 per ton for 'cots.

The Sentinel reports peach mildew as appearing in small quantities in the peach orchards about Hanford.

"Cherries is cherries," at Sebastapol, the price which started at 4 cents is now ranging from 6 to 8½ cents.

The total rainfall at Alta, Tulare county, was 15.91, and it is about an inch greater than the preceding year.

Ex-Governor Pardee offers a silver cup for the best exhibit of fruit grown by irrigation at the coming National Irrigation Congress.

The San Jose Mercury says that the best remedy for the wild morning glory, which has been such a nuisance in many orchards, is Lippia repens.

Something over 30 cars of green deciduous fruit has been shipped from Sacramento. A heavy crop of grapes is the promise of Cordelia, near Vacaville.

The farmers near Yuba City in district No. 70, are planning a scheme of drainage by which some of their most fertile lands will be saved in years of heavy rainfall.

Sacramento reports great interest in the coming National Irrigation Congress. Both Texas and Arizona have sent word of big delegations coming from the southwest.

Tulare County Times reports the appearance again of the vine hopper. It reports that the Italian-Swiss Colony Company near Madera, lost $10,000 last year through this one pest.

The Sutter County Farmer says that cling peaches will command top-notch prices. The output of that section will be about 50 per cent. of last year. Growers are talking $50 to $70 per ton.

O. C. Brown having a 200-acre ranch near Hanford sold the products of the ranch with the agreement that all expenses and gathering and delivery be borne by the purchaser, for $15,750.

The prune growers of Santa Clara Valley have appointed a committee to secure information as to prune markets all over the world, and also as to how large, or how small rather, the crop will be this year.

The annual blossom day, which has become a regular institution at prune blossom time in the little town of Saratoga, was suspended on account of heavy rains, but nothing daunted the Saratoga people and they persisted in having a festival later, which was held last week.

The following are the officers elected at the last annual meeting of the Butte County Citrus Association; Glenn W. Millar, president; J. A. Lawrence, vice-president; D. C. McCallum, secretary; Judge Lott, James Fitzgerald, Glenn Millar, W. H. McNamee, J. A. Lawrence, W. Dial, A. Bartley.

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The acknowledged standards of perfection. All poultry men who have used these machines have supreme confidence in their ability to hatch and breed. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis Worlds Fair for the greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. Filcher, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

Petaluma Incubator Co.

Main Office and Factory, Petaluma, Cal., Box F.
Los Angeles, 505 South Main Street.
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Lincoln Avenue Poultry Yards

Successors to
Capt. E. Pryce Mitchell

Mitchell's White Leghorns Exclusively

Carl C. Curtis, Owner — Lincoln Ave. and Ventura St., Pasadena, Cal.

Circular for the Asking — (Altadena Cars)

200-250 Egg Fowls | **WHITE WYANDOTTES** | Always Win

Eggs and Stock Half Price for May

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Beef, Blood and Bone Will Make Your Hens Lay

This is not a medicine but a high grade nitrogenous food. Write for free booklet, "How to make Hens Lay." Our Poultry Foods are sold by all local dealers and manufactured solely by

The Pacific Guano and Fertilizer Co.

Also Pioneer Manufacturers of *High Grade Fertilizers.* Indiana and Yolo Sts., San Francisco, Cal.
Write for our free booklet, "Farmer's Friend." Valuable to all farmers and ranchers.

Bemis Plymouth Rocks

Barred and White

Prizes Won at Alameda County Poultry Association Show, Oakland, 1907—22 Regular Prizes and 3 Silver Cups. Can furnish best birds and eggs at reasonable prices. No incubators lots furnished

Mrs. Florence E. Bemis, 1757 19th Ave., Oakland, Cal.

The White Faced Black Spanish

Are famous as layers of large white eggs at all seasons of the year. We won all prizes at the Breeders Great Show, 1907. Choice Cockerels For Sale, $5. Eggs, $1.50 per 13, $4 50 per 50, $8 per 100. Special matings, $3 per 13. Fertility guaranteed.

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Buff, Black, and White Orpingtons

Have for sale Trios, Cockerels and Pullets. Eggs for hatching, settings or hundreds. Write or call.

Two Blocks North, One Block East Altadena Post Office

Baldwin's White Leghorns

Egg prices cut in two for May and June. Fine youngsters at reasonable rates. Good older stock cheap to make room. Send for latest price list.

Frank E. Baldwin

46 Washington Ave. - San Jose, Cal

Profit in the Poultry Yard

LATE HATCHED-CHICKS PROFITABLE.

MANY times we are asked if June chicks are profitable? Is it better to break up our yards in June or to bring out a few hatches? And can we raise them? Many seasons, and this one particularly, conditions in the early spring were not favorable to young chicks. While many have had splendid results and have all the chicks out that they can properly raise and attend to, many have not been so fortunate and have fallen far short of their expectations and must either hatch during the month of June or be satisfied with a "short crop."

While the late hatched chicks have many drawbacks they also have many advantages and our advise is to hatch chicks out all of this month. You may have to be more particular but you can raise them to a good advantage.

Some of the Advantages.

By this time of year every observing breeder will know his best layers, or if he has not had the time to give attention that he may know which are his best layers; it is pretty safe to say that the poor layers have been broody long before this and what eggs you get now are from your best layers. Again, it is almost certain you can tell from which hens the fertile eggs come. If you have had the good luck to hatch some early chicks you will by now have formed some opinion of them and to tell which pen, or if you use the trap nest, which hen is producing the most promising youngsters. Thus you may correct some serious defect that may have cropped out, which will give you the advantage of two matings. If you are a beginner you will have gained much knowledge as to the proper method of feeding and care.

Early Maturity.

In many of the breeds the pullets mature and begin to lay at about five and six months of age, so if you are a fancier and raise thoroughbred stock to show or sell for breeders, you have fine pullets just coming into laying by January. If raising simply for eggs then you will have eggs to sell when the prices are highest. So there are many advantages to be derived from the June chick or even those hatched the first of July.

Care and Feed.

It will be necessary to treat the June chicks differently from the earlier ones. It is really necessary to have some green feed and perhaps we may have to plant something specially for them. Lettuce, rape or rye are good and they have the young tender shoots so much relished and the grass will be too tough. Shade is also a necessity.

One of the best runs for late chicks we ever saw was Kaffir corn; it provides shade and as the corn matures it will be splendid feed and they will get much-needed exercise by scratching for bugs, etc. Millet is also good, both for shade and food, but we prefer the Kaffir or Egyptian corn.

Take special care of the food. I especially recommend dry chick food for this time of year, for if you feed a soft food and should put before them more than will be cleaned up it will soon sour, and is apt to cause trouble. Feed only purest food; we prefer to feed often and just what they will eat up clean, than to feed indiscriminately. Should you give a meat food take extra care to see that it is not sour or tainted.

Every Morning.

You must pay special attention to the drinking water. It is absolutely certain if we neglect the water and the vessels that contain it we are going to have trouble. Wash your drinking fountains every morning and fill them several times a day, always taking care that they are not compelled to drink water that has been standing in the sun. A good plan is to wash the fountain and let it sun all day before it is used again. This of course takes an extra supply of fountains but it will pay at this season of the year.

Lice and Mites.

Always remember that lice and mites thrive extra well when it is warm, and unless we look sharp they will get the start of us. Keep the coops and yards thoroughly clean. Spray the coops once a week getting the liquid well into the cracks and crevices as these are the harboring places for the pests.

If you use an incubator and brooder you will not have so much trouble with lice. If you use hens, we would dust the chicks as they are taken from the nest with a good insect powder, and grease the heads with a little lard or vaseline to kill the head lice.

While perhaps it is best to hatch early, yet is is far better to hatch late than to fall short on the season's work, and there are actually some advantages to be gained over the usual methods.

AROUND THE YARDS.

Don't raise lice, mites and chicks in the same house; you will make a failure of one or the other.

* * *

Never allow your birds to become scared as you never get best results unless your birds are contented.

* * *

As soon as the breeding yards are broken up sell the surplus males; never feed birds that are not needed.

* * *

Sow a small patch of rye for the late hatched chicks. It will renew the ground and do the little fellows a world of good.

* * *

The roosts should be given a good coat of kerosene every two weeks, and nothing must be neglected even for a single day.

* * *

Air-slacked lime is one of the best things to throw aroung the house and on the dropping boards as it absorbs and odors and gases.

* * *

Paint is a good vermin destroyer; it also adds greatly to the looks of the poultry houses and fences. Use it liberally as it serves a two-fold purpose.

* * *

If your chicks have bowel trouble look for lice as nine-tenths of trouble starts from lice or mites; they sap all the vitality and leave them in a condition to take any disease.

* * *

If your birds are just mongrels

get a trio of thoroughbreds, or a few sittings of eggs and start with a good pen next spring. Blood in poultry will tell just as quick as in horses, cattle or hogs.

* * *

Did you ever figure out the relative cost of 1000 pounds of poultry and 1000 pounds of beef, and the time it takes to produce each; also the market price on foot. There is a good place to make comparisons.

* * *

Mary's father was trying the experiment of raising chickens with an incubator in his barn. The neighbors were much interested in this experiment, and meeting Mary one of them asked, "Mary, have you any little chickens at your house yet?"

"No, but we're makin' some," replied the little maiden.—Ex.

* * *

A Correspondent of the Dakota Farmer writes: "I see a great deal in print about how long after mating hens with a male before eggs are fertile. On March 20th, I mated nine Rose Comb Brown Leghorn hens with a high scoring cockerel. On the 21st, 1 egg out of five was fertile; on the 22nd, 1 out of 5; on the 23d, 2 out of 6; on the 24th, 2 out of 5 and on the 25th, 5 out of 6 were fertile. The hens had not been previously mated. In February, I mated eleven Black Langshan hens and began to save the eggs for incubators two days afterwards. And in about ten days placed all I had received in one of my incubators and only one egg tested out as infertile."

REARING LITTLE CHICKS.

The rearing of little chicks is perhaps the most important part of the poultry business.

To buy a fine pen, trio or eggs for hatching at a fancy price and get the chicks out and started and then have them die off is most discouraging. To mate up your best birds and hatch out chicks that you expect to be your prize-winners and get them coming along in good shape, then go out some morning and find them standing around all humped up and well started to the bad, makes a person's heart go way down in his shoes and he or she feels as if they would like to sell out pretty cheap. Well, that is what a good many of us chicken people have gone through. I have been all along the line and hit as hard as the next one, but had the hen fever so bad that I would not be discouraged.

The Brooder.

After hatching the eggs from sturdy stock perhaps the most of importance is the brooder. A good brooder that will furnish the right amount of heat and plenty of fresh air is the first thing we want. Then comes the feed.

The Food.

Of course we all know that a newly hatched chick has food enough in its little body in the shape of the unabsorbed yolk to last it for 36 to 48 hours and it is better not to feed them too soon. I will give the system of feeding that I have been using this season with good results.

My System.

My first food for them is finely cracked wheat scattered on the floor just outside the hover; I also have a low cover, or pie tin filled with cracked wheat where they can get it at easily. After they have picked at the cracked wheat for about two hours I give them chick grit. I kown that most people give them the grit the first thing but I believe it is better for them not to fill up on grit first as they are apt to get too much. I feed the cracked wheat for two days in this way then I use a commercial chick food. I feed them from now on just what they will eat up clean every two or three hours, thrown into the litter on the floor of their little run.

About once a day after they are a week old I put a mixture of bran feed meal, cut oats and fine beef scrap. This I put in a low box and they go to it in a way that makes me think that they like it.

I keep fresh water, chick grit and charcoal before them all the time, also a head of lettuce for green food. As they grow older I make their run larger and keep litter for them to scratch in as they grow better and are happier when kept busy. After they leave the brooder they should have as much range as possible and plenty of shade also.

Keep their drinking water in the shade. I speak of this because it seems to me that some people will never learn to do it. I go around a good deal and see so many people that leave the water for their chicks right out in the blazing sun. Still they wonder why they lose their chicks. Poor management is often laid to hard luck.

Another thing I wish to speak of and that is the getting right out with our stock and studying it. If things are going wrong with one brood get in and think about it; study the location. The way the wind blows these cool nights. Look for lice and mites. It may be the lack of proper shade. The water may be in the sun and it may be that the chicks are crowded. Find out the cause of the trouble yourself and don't spend your time asking your neighbors, as they do not know the conditions, and the chances are they haven't the time to go to your place to look you over.

Out Around the chicks.

Get out among the chicks yourself and study the cause and you will learn why things are going wrong. Last Sunday I got out in the hot sun with my chicks and found out that they needed more shade and they got it and are better off. I never would have known it by sitting up on the porch in the shade smoking a cigar.

If I have extra good success with any certain brood of chicks I make a memorandum of the conditions and feed and try the same system with the rest of my chicks.

Last week an acquaintance of mine stopped me as I was passing and wanted to know what was the matter with his chicks. He said he was having hard luck with them. They had been doing well until within the last few days, now they were dying off very rapidly.

I had often thought as I passed his place what an ideal place for chickens. Plenty of range and shade, and I knew he had plenty of money to make nice houses and coops. I promised to go over the next Sunday and did so.

The first thing in the way of chickens was a newly-hatched brood in a slat run sitting right out in the hot sun instead of under a fruit tree where it ought to have been that hot day, and there were plenty of them too. There was about a half pint of

Until the Chicks are over half grown, feed them dry

West Coast Chick Feed

Bright, pure, clean, made of the finest grains, seed, meat, etc., in just the right proportion to make a full rightly-balanced ration. They like it, too, and eat it up clean, for it contains no waste whatever. It keeps them healthy and will make them feather faster, grow faster and larger than will any other feed. They need nothing else until over half-grown. If your dealer does not keop it, and will not get it, send $3.35 for 100 pounds, freight prepaid by us to any point in California.

Manufactured by the

West Coast Stock Food Co.

818 San Fernando St. (Through to Alameda) Los Angeles, Cal.

SALES OF A. C. W.

Egg Food are increasing again; this reminds us that we can help those poultry raisers who are not getting the best results from their flocks. Use A. C. W. Egg Food and be convinced it is all we claim for it as the greatest Egg Producer on the market and entirely a natural product. No stimulants or drugs to make "dope fiends" of your hens and disaster to your bank account, but made of the best of mill food and animal matter in the exact proportions to make it palatable and produce eggs.

EGG FOOD A·C·W IT FILLS THE BILL

Keep the hens in the best of condition. Try a sack at all dealers or from our factory direct. We manufacture also Meat Meal, Blood Meal, Pearl Oyster Shell (the new kind), Bone Meal, etc.

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We manufacture the Improved Pacific Incubators and Combination Brooder, and also the "Business" Incubators and Brooders, and they can't be beat.

Our stock of Poultry Supplies is large, fresh and complete, at the very lowest prices.

Come and see us at our new store. We'll treat you right. Or send in your orders.

PACIFIC INCUBATOR CO.

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Excelsior Mills

Excelsior Chick Food

Excelsior chick food is a perfectly balanced ration for your growing chicks. Will raise the largest possible per cent. of your baby chicks. All pure food, no shriveled grain and filler used in its manufacture. Absolutely clean and free from dust. No waste.

The Best Food on the Market

Ask for Excelsior. If your dealer cannot supply you write us. Circular free if you mention the Cultivator.

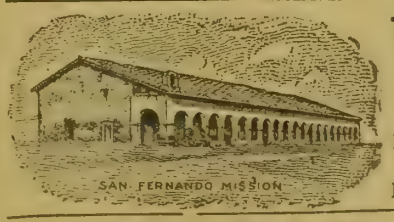
Del Monte Milling Co., 242 Central Ave., Los Angeles, Cal.

Beef Scraps Raw Bone

GUARANTEED ANALYSIS:		GUARANTEED ANALYSIS:	
Protein	65%	**Protein**	25%
Fat	8%	**Phosphates**	45%
Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps No fertilizer ingredients in **these** Beef Scraps.		Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.	

Pure, Clean Animal Matter Poultry Foods

WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA



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That Are Trap Nested

Prize Winning, Large Egg Laying Strain
Won 19 Prizes in 1906

Mammoth Bronze Turkeys Lakenvelders
Stock For Sale. Write for Circular

Mrs. C. D. Hubbard, Box 282, San Fernando, Cal.

Special Ten Days' Offer!

Hayden's Altadena Buff Orpingtons Box 1001, Pasadena, Cal. or Home 1200

Five and Three Dollar Sittings at Half Price.
100 Young Pullets, $50.00. All Show Birds!
North Lake Cars to Alameda, One Block West

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Coulson's Mixed Poultry Foods

Are Better Than Ever

The Coulson Company's Standard Brands of Poultry Food

Feed your chicks on

Coulson's Special Chick Food

for the first six weeks or so, till they are well feathered, strong and active. Then keep up their continuous and rapid growth by feeding

Coulson's Growing Chick Food

up to three months old, when the pullets can be fed

Coulson's Improved Mash Egg Food

This will insure you healthy stock and plenty of eggs. At this time of the year a little of

Coulson's No. 3 Condition Powders

are most beneficial for keeping the hens healthy, after the laying season, and for getting all eggs possible before they begin molting.

Coulson Poultry & Stock Food Co.

Petaluma, California

Germain Seed Co., Los Angeles, Distributing Agents for Southern California

wet mash on a board which would be sour in a short time sitting there in the sun. We went on farther and all the water dishes were out in the open where the sun could get at it, warm it up and spoil it. At one place a bucket sat in the ground and the water was filthy as the ducks had been paddling in it and I saw some chicks about two months old drinking that water. I thought to myself that it was no wonder that his chicks were dying. I told him of a few changes to make and I saw him this morning and he said he was not losing any more chicks. Was this a case of hard luck or of mismanagement? I refer to this case, as it shows where a good deal of the "bad luck" with chicks is that we hear so much about.

The chicken business is like any other business. It has got to have the proper attention and management. It will not look out for itself as some people seem to think.

Don't forget to look after those lice and mites.—A. W. Huskins.

NEW BUILDING FOR POULTRY AT STATE FAIR.

By the opening of the coming State Fair the directors of the Association expect to have completed a new building for the display of poultry. The building is to be used exclusively for the poultry exhibit and will be properly ventilated. It will have in addition to a sky light, side lights which will give plenty of light to show poultry to its best advantage. The exhibit of poultry is being encouraged by the state and is hoped that the exhibit will be larger than heretofore and that it will be represented from all sections of the state. We would like to see judges selected from different parts of the state and thus encourage more of the breeders and fanciers to exhibit

Quite a good story is printed in The Youth's Companion of a hen that was discovered in a neighbor's parlor cackling over an egg that she had just laid on a sofa pillow. The next day the hen went to the house of another neighbor and laid on egg in the kitchen sink; and a day or two later, it visited the third house, and left an egg in an egg-cup on the fourth pantry shelf. The news-gatherer who tells of this hen says that her owner is planning to establish an egg route and send the hens around each morning to deliver the goods.

In Denmark there are 224,000 rural landowners. More than half have not more than one acre, 96,000 have less than four acres, and only 2000 have more. The small landowners mainly occupy themselves with the egg and fowl industry.

An unsuspected draft striking the fowls at night while on the perches is responsible for many a case of cold in the head and incipient roup. Stop up the cracks in the henhouse.

The drinking vessels will need more attention as the days get warmer. Keep them clean and filled with fresh water, and always in the shade.

Upon the first of the month spray and whitewash your houses, roosts and nests that no vermin may live.

"A pretty woman can easily make a fool of a man."

"A pretty woman does not need to; upon her appearance he will make a fool of himself."—Huston Post.

Bees and Their Care

FARMERS SHOULD KEEP BEES.

IN THIS era of diversification, the thought occurs to me: Why don't more farmers keep a few bees? I have asked the question of some of my friends, receiving the reply: Oh, I don't know anything about bees, or I would like to, but they sting so bad; or another will declare there is no money in bees, because his neighbor had some bees in boxes that he never gets any honey from. All this, and the numerous questions asked in these columns of your valued paper indicate that among the masses of the farmers there is little actual knowledge of the "busy little bee," the greatest living example of industry and economy.

There is no investment a farmer can make that will pay as high a rate of profit as a few colonies of good bees, say ten to forty stands, according to growth of flowering plants or trees near by, provided he will handle them intelligently. By this I mean use proper equipment in the way of interchangeable hives, supers, frames, bee escapes, queen and drone excluders, a bee veil and a smoker. With anything like the care taken of their horses, cows, pigs or even the dogs, the bees will yield an average of 100 pounds of honey per stand per year.

Great Profit.

This is 150 per cent profit, for it is all profit; the work is hardly worth counting, but do not misunderstand me; to get good results you must go at it right, get good bees, Italians or Carnolians preferred, on account of their gentleness. Use the standard Langstroth dove-tailed hive which is made by all bee supply manufacturers, and use interchangeable frames throughout. A bee escape should be used on each stand to prevent the escape of the bees in swarming time. Queen excluders should be used to keep the queen from going up into the supers and making brood comb where only honey comb is wanted. A bee escape board can be used by those who are afraid of the sting so the bees can be driven from the supers down to the brood chamber when one wants to take out honey.

A veil is a safe thing to don whenever one goes around the bees. No honey should ever be taken from the brood chamber, for this is the storehouse of the colony.

Much valuable information can be obtained from the catalogues of bee supply houses, as they tell all about their various kinds of apparatus, how to use and their merits. Before I went into the bee business I got all the catalogues I could, then I studied them at odd times till I got some idea what to do and what to get.

If the farmer has no time or inclination to read and learn things, let his wife, son or daughter do it for him. By all means wake up and pick up the couple of hundred dollars going to waste every year.

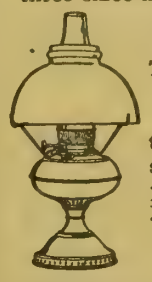
SHADE FOR BEES.

Shall we shade our bees and, if so, why? Some bee keepers do not shade their hives, others do. Why do they do so? Is it really necessary and they thereby secure any more honey? These are pertinent questions to which it is difficult to give definite answers, but we should gain all possible knowledge of the subject. The temperature of a colony of bees in summer, when the brood is being reared, is nearly 100 degrees. Until the temperature in the sun reaches this point, shade is no benefit; rather is it an injury, as it deprives the bees of the warmth of the sun at the time when it should be of some benefit. When the temperature in the sun goes above 100 degrees and begins to climb up to 110, 120, 130 and 140 degrees, then every effort on the part of the bees is exerted to lower instead of raise the temperature in the hive. Crowds of bees stand at the entrance of the hive and with their wings create strong ventilative currents of air. The color of the hive has a great bearing upon the necessity for shade. Black or dark colors absorb heat, while it is reflected or repelled by white. We have seen the combs melt down in an old weather-beaten hive that stood in the sun; but we never saw them melt in hives painted white or light color, even if standing in the sun. For the comfort of the apiarist it is well to have a few scattered trees in the apiary, but nave their branches trimmed to such a height as to be clear of the head of the operator. Perhaps the whole question of shade might be summed up somewhat as follows: If the apiary is located where the cool breezes can fan the heating sides of the hives, driving away the heat ere it accumulates, and a broad entrance is furnished to each white or light colored hive, we are persuaded that shade is not so very essential; but if the hives are dark in color, or the apiary is located where there is not free circulation of air, we feel sure that the shade is an absolute necessity to prevent the combs from melting down, if for nothing else.—S. W. Farm and Orchard.

For cool cooking, less work and least fuel-expense use a

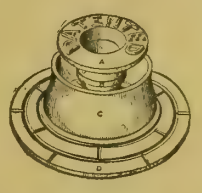
NEW PERFECTION
Wick Blue Flame Oil Cook-Stove

—the ideal stove for summer. Does everything that any other kind of stove will do. Any degree of heat instantly. Made in three sizes and fully warranted. At your dealer's, or write our nearest agency for descriptive circular.



The **Rayo Lamp** is the best lamp for all-round household use. Made of brass throughout and beautifully nickeled. Perfectly constructed; absolutely safe; unexcelled in light-giving power; an ornament to any room. Every lamp warranted. If not at your dealer's, write to our nearest agency.

STANDARD OIL COMPANY
(Incorporated)



The Star Oil Burner NO WORK WORRY DIRT DANGER

The Star Oil Burner is a simple, safe and economical device for taking the place of wood or coal in all cook stoves, ranges or heaters, without more soot or smoke than from a wood fire.

FOR FURTHER INFORMATION CALL OR WRITE

Western Star Mfg. Co. 218 West Sixth Street Los Angeles, Cal

AN ADMIRAL WITHOUT COST

3 FEEDS TO THE ROUND — SELF FEEDER — 2 PROFITS IN HAY BALING

The difference in the increased earnings of the ADMIRAL THREE-STROKE SELF-FEED PRESS more than pays for the press in one season, at a conservative estimate of 2½ tons per day over the old style two-beat, foot-feed press, besides the ease of labor on both men and team, and better work. Let us figure a little to convince you.

2½ Tons per day for one week, 15 tons at $1.50 net	$ 22.50
One month's earnings over the other press (26 days)	97.50
On an estimate of five months' work out of the year	487.50

The above gain with the ADMIRAL more than pays for the press.

PACIFIC IMPLEMENT COMPANY, GEN. AG'TS.
131 TO 153 KANSAS ST., SAN FRANCISCO, CAL.
Write for Circular and Full Information. ***A. A. WHITNEY,*** ***Special Agent***
Room 203, 316 Commercial St., Los Angeles, Cal.

TALLERDAY SURFACE IRRIGATION PIPE

SAVES WATER, GRADING AND TIME

The **only** way to **Irrigate Alfalfa. Cheaper** than **Flumes.** This is only **one** of our **specialties.** We make **Riveted Water Pipe** in lengths of **ten feet** from **single sheets.** Let us **prove** to you that we make **Pipe** and **Tanks right.** WRITE FOR CATALOGUE.

TALLERDAY MANUFACTURING CO.

636-7 Pacific Electric Building Los Angeles, Cal.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

Mildew of Grapes.

Is sulphur a cure or only a preventative of mildew on grape vines? Is it the fumes of the sulphur that destroys the mildew? Is it necessary to put the sulphur all over the vines?—A. S.

Sulphur is the best remedy or preventative for mildew and that which is used entirely, we believe, in fruiting season in the vineyard districts. It was treated fully in Mr. Mill's article in deciduous fruit department in our issue of June 6th, page 588, and in it you will note that it is the fumes of the sulphur which destroys the mildew. It probably would not be necessary for the sulphur to reach all parts of the vines. If by "cure" you mean wiping out of the disease so it will not appear next year, then it is not a cure, though it may totally destroy the mildew at time of application.

Sterile Figs.

I have a fig tree, which bears profusely, early each year, but before ripening, fruit all falls off, never maturing any fruit. There is a fig tree of another variety near by which matures fruit all right. What is the matter, and the remedy?—A. R.

This query has been sent to Mr. Roeding at Fresno, who is one of the busiest men on the face of the earth, but we hope he will get time to give us an answer for our next issue. However, our guess would be that the fig in question, is in need of fertilization of its flower. It can be secured by planting capri fig, and securing a supply of Blastophaga. If the writer had given something of a history where his tree was secured, it might help in giving the answer. However, we wait Mr. Roeding's reply.

Apricot Disease Again.

What is the matter with my apricot trees? Age from three to sixteen years. Soil varies from gravely to heavy adobe; no difference as to soil or age noticed. A heavy cover crop was plowed under this spring. Trees came out all right and some set full crop when all at once the tops wilt and the tree dies. Have grown apricots for ten years, but this is new to me. What can be done to save trees?—J. C. D.

Your query was answered by Mr. Mills in the issue of June 6th, on page 603, in which he advises the use of bluestone water in weak solution as a possible help for the trouble; also he holds out the hope that the disease will soon cease to be a menace.

Trees on Overflowed Ground.

What kind of trees would be the best for ground that overflows part of the year?—Louis Ped.

We know of no fruit tree that will stand long periods of submergence. Some species are more hardy than others and will recover after being under water for some time, but such treatment is fatal to most. The pear is best for such conditions as our correspondent describes, but this is subject to blight. Apples perhaps come next and might do under such circumstances, but there is no fruit which will give satisfactory results on land which is under water, even a portion of the year. We should certainly advise other than orchard crops under such conditions.—J. I.

Government Land.

J. H. R. and the many others whose queries are still coming regarding the San Jacinto forest reserve lands in the Yuciape Valley, was answered in last week's issue, on page 206. Any further information desired may be had by addressing the U. S. Land office, Los Angeles.

Mange on Horses.

If the inquirer of a remedy for mange on horses refers to page 602 of last week's issue he will find a remedy given there.

UNIVERSITY WORK IN SOUTHERN CALIFORNIA.

According to regulation the Regents of the University of California have adopted a general plan for the conduct of investigations and experiments to be pursued during the coming fiscal year. The provisions for work in Southern California at the Whittier Pathological Laboratory and the Riverside Citrus Experiment Station may be of some interest to the reading public. First of all the new laboratory building upon the site donated by the citizens of Whittier will be completed and will be equipped with the apparatus and collections which have been successfully used in temporary quarters. Investigations of the walnut blight will be continued through laboratory study and field experiments; and observations will be carried on as to local adaptability and blight resistance of a collection of various plants in the grounds of the State School at Whittier. Experiments with the use of fertilizers on walnut trees will be conducted, arrangement for co-operation having been made with the Cudahy ranch near Los Angeles. The investigation of the brown rot of the lemon will be concluded, and the detailed report published giving the highly satisfactory results attained in the treatment of this disease on the ranch and in the packing house. Citrus fruit troubles will be investigated including "gum diseases," "puffy oranges." etc. The experts will make careful investigation of tomato diseases and other miscellaneous plant diseases. At the branch experiment station at Riverside the planting of citrus fruit collections will be completed; experiments will be conducted with the use of fertilizers and other cultural treatments upon an adjacent area of bearing orange trees secured in co-operation with indiviaual growers in the various localities; and for the first time, observations will be undertaken looking toward the determination of the relative value of different roots for citrus trees. Finally, there will be investigation of bearing orchards of oranges and lemons as to soil, cultural treatments, etc., to determine the relations of these conditions to success and profitability.

SOME FACTS ABOUT CORN.

It was the corn given them by the Indians which kept the English settlers on Massachusetts Bay alive during their first winter in the New World; and yet this kindness did not prevent the English, during the Pequot war, in 1636, from destroying 200 acres of corn harvested by the Indians on Block Island.

Corn is believed to have been introduced into the Philippines from South America in 1520 by Magellan and was carried thence to China.

The Kaffir corn introduced for trial in the arid region in the Southwest where it has succeeded remarkably well, makes excellent meal.

Scarcely any other grain has shown the adaptability of corn. A native of the warm, moist parts of South America, it has gradually fought its way into the colder and dryer regions, until there are few sections in which it cannot be profitably grown. Its adaptability is shown in the fact that in the far North the plant is low and spreading, but maturing its ears all the same.

Experiments continuing for three years at the Indiana Experiment Station with barnyard manure as a fertilizer for corn, showed that while three tons to the acre increased the yield 14.9 bushels per acre, six tons made an increase of but 16.2 per acre. Thus the addition of the second three tons of barnyard manure estimated as having a value of $2 per ton as a fertilizer, or $6 for the three tons, increased the yield only 1.3 bushels or about sixty-five cents in value.

Government reports show that 95,535,000 acres were planted in corn this year, an increase of 1,500,000 over last year's area. Estimating the yield at twenty-five bushels to the acre the total production would be 2,388,375,000 bushels which, at fifty cents per bushel, means a return of $1,194,187,500 for this one crop alone, or only a little less than the gross earnings of all the railroads in this country last year.—Farm Journal.

After all is said about book farming, there is no doubt but that the educated farmer makes a better living and makes it easier, than the uneducated one. The same principle applies to the farmer, that applies to any other calling. It is nonsense to say that the ignorant is more independent than the intelligent. The practical intelligent man is at an advantage everywhere. But the theorist, the visionary man, is a failure, no difference what his vocation may be. It is not intelligence, not education, that hurts, but it is the impracticable theory.

The man who has a big crop of peaches this year will make big money. Apples and pears must be high. Every effort should be made to keep our fruit clean and have it well developed and highly colored. Men in the east are inquiring about our high grade fruit and are trying to contract it at good prices but are not meeting with success. My advice is take good care of your fruit and wait.

The regular shipments of grapes from Imperial began last week. The growers are hoping to receive the equal of last year's returns, some smaller lots at that time bringing 7 cents per pound.

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Irrigation and Forestry

RUNNING OUT IRRIGATION FURROWS.

ONE of the earliest methods employed by pioneers in irrigation was to start at the source of supply and plow a furrow following the proper line as best one could judge. This was the system adopted by David K. Wall in May, 1859, when he planted the first garden tract in Colorado. After plowing for some distance, water was left in the furrow and if it flowed to the lower end the furrow was continued. If not, the furrow was changed until water followed the plow to the end. If water runs through a furrow, it will flow with greater ease in a larger ditch located on the same line. This method is not recommended for inexperienced irrigators. It is best when running a grade line in locating laterals to use some simple leveling instrument if a surveyor is not employed. Probably the most common type of a simple, home-made leveling device is the triangle with plumb line.

Contour.

It is necessary that field laterals shall be built with embankments rather than cut below the surface so that water will flow out at any points along them where the banks are cut. For this reason the grade line must be closely followed, when no cuts will be needed to make the water flow through the lateral. The construction will depend somewhat on the slope of the land. If a lateral runs across a slope so steep that there is a noticeable difference in the height of the ground above and below the lateral the dirt should be thrown on the lower side. If the ground is nearly level, the dirt shoul be thrown on both sides.

An easy way of making a small lateral is to throw four furrows together with an ordinary plow, then with the same plow or with a single-shovel cultivator plow out the middle of the ridge, making the bottom of the ditch just a little lower than the original surface of the ground. This keeps the ditch well above the surrounding land, and the water can be taken out without trouble. After a lateral has been made in this way the banks should be strengthened with a shovel wherever the dirt has been thrown out unevenly by the plow.

Catch the Gophers.

Laterals need more or less constant attention when in use. If neglected breaks, leaks and blocking of the channel may occur and probably at a time when water is most needed. A heavy storm may cause the washing out of the lower bank in the lateral, especially on a hillside. Such a break must be speedily repaired. Unceasing annoyance and trouble in the operation of laterals is caused by gophers which burrow holes on hillside slopes and will burrow from the bed or side of a canal or lateral down through the lower bank, coming to the surface again perhaps ten or more feet below their starting point. When water is first turned into a canal in the spring the water finds its way through these holes.—Denver Field and Farm.

Colton claims a fine setting of oranges.

ENCOURAGES FORESTRY.

The seventh annual meeting of the Counties Committee of the Promotion Committee, which convened at Petaluma on June seventh, was the most representative meeting that has been held, showing the widest representation of any of the sessions which have taken place. Every county was represented through organizations, there being one hundred and nine delegates present from fifty-two organizations. This is a growth which shows the increasing interest that is being taken in these meetings as their results and value are becoming more widely recognized.

The subject of the meeting was Forestry and Irrigation in California, and the papers read before the assembly covered various phases of both problems, pointing out just what benefits would accrue to the different sections of the State by a broad policy for the conservation and reforestation of timber lands and the extension of irrigation systems.

Professor Samuel Fortier, of the Forestry and Irrigation Service; W. A. Beard, Ex. Gov. George C. Pardee, G. B. Lull, State Forester; F. E. Olmsted, Forest Inspector U. S. Department of Agriculture; Francis Cuttle and others spoke.

Riverside, Santa Cruz, Monterey, Merced and Fresno each put in a bid for the honor of holding the next meeting, and as Fresno had put in its claim a year before that city was finally chosen.

In the report of the committee on resolutions, which was unanimously adopted, the sentiments embodied in the papers read at the two sessions were crystallized and provision was made for the appointment of a committee on Forestry and Irrigation, a sub-committee of the counties' committee which will carry out the recommendations of the meeting and the various organizations which assisted in the entertainment of the delegates.

WHAT'S THE USE.

What's the use o' growin' up?
You can't paddle with your toes
In a puddle; you can't yell
When you're feelin' extra well.
Why, every feller knows
A grown-up can't let loose.
I don't want to be no older—
What's the use?

What's the use o' growin' up?
When I'm big I don't suppose
Explorin' would be right
In a neighbor's field at night—
I won't like to get my clo'es
All watermelon juice.
I don't want to be no older—
What's the use?

What's the use o' growin' up?
You couldn't ride the cow.
An' rabbits an' the pig
Don't like you cause you're big.
I'm comfortablest now.
P'r'aps I am a goose:
I don't want to be no older—
What's the use?

What's the use o' growin' up?
When yer growed, why, every day
You just have to be one thing.
I'm a pirate, er a king,
Er a cowboy—I can play
That I'm anything I choose.
I don't want to be no older—
What's the use?
—St. Nicholas.

The first peaches shipped from Florida to New York this year were shipped on May 6, and the first watermelons May 8.

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IF.

If all the skies were sunshine,
Our faces would be fain
To feel once more upon them
The cooling splash of rain.
If all the world were music,
Our hearts would often long
For one sweet strain of silence,
To break the endless song.
If life were always merry,
Our souls would seek relief,
And rest from weary laughter
In the quiet arms of grief.
—Henry Vandyke.

THE HEART OF THE WORLD.

GRAY shadows were creeping over the sand dunes beyond Pacific Heights. Only here and there a lanceolate beam touched the hills, from the crimson ball going out to sea through the golden gate. There was a scent of lilies in the air, mingling with the more wonted perfume of February roses. The hum of the city sounded far away, and the song of a meadow lark could be heard from a treetop.

The door of the house stood open, revealing a broad hall. There was a suggestion, in the dim light, of waving ferns and the silvery gleam of a fountain, in the conservatory at one side. From the door jamb there swayed in the breeze long ends of soft, snowy ribbon, holding in place a cluster of white roses.

In the center of a stately apartement that opened upon the hall stood a tiny white casket on slender pillars. Two candles burned at its head. By a window a man sat, gazing, with unseeing eyes, into the creeping shadows of the trees. A woman lay in a crushed heap among the pillows of a divan. Neither had moved for a long time. The little form in the white casket had been their all. Now it lay scarcely stiller than they.

Suddenly the silence was broken by the sound of a woman's voice, high-pitched and clear.

"Willy! Willy! oh, Willy!" it cried, A friend within the house hastened to the door. Along a pathway through the shrubbery a handsomely dressed woman appeared. "Oh!" she exclaimed, advancing; "have you seen a little boy about four years old? My little boy is lost! Some one said they saw him come in here. I cannot find him; and I am afraid he has fallen somewhere in the sand dunes?"

"Have you notified the police?"

"Long ago. They are all on the lookout for him. But he may be buried in the sand. We have been searching for hours. Oh, I have lost two little ones through death, but I never felt as I do this moment!"

The mother's heart wailed forth behind the cultured woman's enforced composure.

The woman who had been lying among the cushions came through the hall to the door.

"What is it?" she asked.

The friend put her arm about her and would have drawn her back; but the stranger spoke.

"My little boy is lost," she said, excitedly. "He is only four years old. We are afraid he is among the sand dunes."

"Oh," cried the younger woman, "I am so sorry! Is there nothing we can do? Cannot we help you look for him? The poor little fellow! Think of him all alone in the dunes! How did it happen?" And she put her hand in the stranger's for sympathy.

The latter was full of her story of coming home from a round of calls to find the child missing and the other children seeking him. Even as she spoke, voices could be heard calling from the sand dunes, "Willy! Willy! oh, Willy!"

"I must go," cried the mother. "Oh, my heart is breaking! Willy! Willy! Where can he be?"

As she turned, a passing zeyphr blew the white ribbon on the doorpost straight out across her cheek. She started back, dismayed.

"Why," she cried, "you have a dead child in this house!"

"Yes," said the other mother; "my only child, a little boy, just four years old, died this morning."

Tears came into the stranger's eyes. "Oh," she cried, "do forgive me! I am so sorry! I did not know. Dear heart! to think I should have troubled you. I, too, have lost two children by death; but this is more terrible. My little boy! You see I do not know where he is."

"I know," the other said, calmly. You must let us do what we can for you. Oh, I am sure you will find him. Let me go with you. We will search together. Not to know where your baby is! Ah, what trouble there is in the world!"

She seized a wrap, and the two women went down the walk together. At the corner they were met by a boy of perhaps a dozen years.

"Some children say they met a little boy like yourn goin' down toward North Beach," he said.

They hurried down the hilly street.

"Have you seen anything of a little boy, about four years old, playing about here?" asked Willy's mother of a homeward-bound laborer. "My little boy is lost."

"Shure, mem, now, that's very bad, an' I'm sorry," the man said, halting; "mebbe he'd be at th' p'lice station?"

"No, I've telephoned all the stations. Some one thought they saw him down here. What shall I do?"

The face of the big, rough man worked sympathetically.

"I'll kape me eyes open ez I go along home, mem," he said; "an' mebby I'll see th' little feller. Tut, now! What if 'twore me own little Tim? He's just four years old, the rascal, an' 'twad kill 'z mother shure. Ah, but it's wearyin' an' comfortin' to th' heart, mem, the children bez."

The way grew more squalid as they kept on toward the beach. On a door-step a woman sat holding a little child, and looking anxiously down the street.

"Have you seen a little boy?" the older mother began, and again the sad little tale was told.

"No," said the other woman; "but I hope you'll find him, lady. I know how you feel. Me heart's sore over me own little Joey, here, and me man away looking for worruk. The baby is that sick! an' Jim, me other lad, he's gone for the medicine. I don't know what's keepin' him."

"Let me see the baby;" and the mother, whose little one lay dead at home, reached out her jeweled hands. The child was placed in her arms.

"Why, he is very ill indeed!" she exclaimed. The little one's face was livid. The baby's fingers were clutched over each tiny thumb, and the tiny body shivered convulsively.

Willy's mother eyed the little form knowingly. "The child should be put into a warm bath, at once," she said.

The three women entered the house and busied themselves over the sick baby. She whose child was lost found a battered kettle and put water to heat over the single-burner lamp. The other one undressed the little form, while the wee sufferer's mother stood wringing her hands in helpless pain.

They worked rapidly, tenderly; but it was nearly an hour before the terrible convulsions were over and the baby resting on the bed.

"God bless you, ladies!" the poorer woman cried, as she saw relief creeping over the drawn face; "you've saved my baby's life!"

"But oh, my own little boy!" and the other mother hastened to the door. "It is quite dark, and I do not know where he is."

"Sure, lady, the good God'll never let your baby be lost!" but the two strangers were gone.

"Oh, where will he sleep to-night?" murmured Willy's mother. "Your boy is safe with God, but where, where is mine?"

Up the street an older boy came tearing. "Mamma! Mamma!" he cried, while yet afar off; "a policeman's found Willy and taken him home!"

"Oh, thank God!" said she whose child was with the All-Father—"thank God!" but the other could not speak.

It was a triumphal progress back to the more aristocratic quarter.

"They've found yer bebby, ma'am," a street urchin cried, who was calling papers on the street corner. A Mexican tamale vender volunteered the same information in broken English, and in the next block a woman threw open a window and leaned forward.

"A policeman took your little boy home, madam!" she called, joyfully.

Nearer home a gleeful band of children met them.

"He's found—he's found!" and the chorus rang throughout the neighborhood.

The two mothers kissed tenderly and parted. As the younger one turned to enter her childless home her eyes were swimming with the first tears she had shed that day; but they were tears of thankfullness.

On the door-step of the other home a man stood, holding a child in his arms.

"We've got him," he called, quickly, as he bent to kiss his wife; and then his arms closed tightly around them both.

"Oh, Willy," he said, "how could you frighten us so? Why did you do it?"

The curly head was raised and the blue eyes opened in surprise.

"Why, papa," said the little voice, "Mary said they wuzzent any or'nges for dinner, an' I went to buy some!"
—Independent.

"If you value your sweet wife,
Tell her so!

"There was a time you thought it bliss,
To get the favor of one kiss;
A dozen now won't come amiss—
Tell her so!

"Never let her heart grow cold—
Richer beauties will unfold;
If she's worth her weight in gold—
Tell her so!"

FOR THE COOK.

A good and an inexpensive breakfast sweet is apricot marmalade made from canned apricots. Measure the fruit, and to each pint allow three-fourths of a pint of sugar. Cook over a slow fire, stirring once in a while until the marmalade is thick.

A Summer Dish.

A tomato aspic is a boon in hot weather. To make this, strain the liquor from stewed tomatoes, and put it over the fire with a sliced onion, a bay leaf, a stalk of celery and one of parsley, and cook for fifteen minutes. Add to one pint of this one full tablespoonful of gelatine which has been soaked in just enough cold water to soften it. Stir until dissolved, take from the fire, season and strain, and set aside to cool.

This is good to serve with cold meat or with vegetables of several sorts. A delicious dish may be made by pouring a little of this aspic into the bottom of a mold, arranging cold chicken or cooked sweetbreads upon it, pouring in more of the jelly, placing on this a layer of the whites of hard-boiled eggs cut in slices, with the whole yolks among them, and then filling up the mold with jelly. This should be very cold and firm before it is turned out. It may be made richer by serving mayonnaise dressing with it. This jelly is also good if set to form in small cups, turned out on lettuce leaves, and dressed with a mayonnaise or a French salad dressing. Or it may be made in a large mold, turned out on lettuce leaves, and garnished with radishes.—Woman's Home Companion.

Beef Croquettes.

Take cold roast or corned beef. Put it into a wooden bowl and chop it fine. Mix with it about twice the quantity of hot mashed potatoes well seasoned with butter and salt. Beat up and egg and work it into the potato and meat, then form the mixture into little cakes the size of fish balls. Flatten them a little, roll in flour or egg and cracker and crumbs, fry in butter and lard mixed, browning on both sides. Serve piping hot.

Baked Hamburg Steak.

One and one-half pounds raw chopped beef, two cups of stale bread softened with half a cup of hot milk and cooled; two eggs, small onion minced, teaspoon of salt, saltspoon of pepper and pinch of ginger. Mix well and shape into squares; place in baking pan with a tablespoon of tomato, small onion and butter the size of a walnut on top of meat. Bake one hour, basting frequently. The potatoes should be boiled fifteen minutes, then drained, pared and placed in pan with Hamburg stake to cook forty-five minutes, being turned and basted often. Medium-sized potatoes are best for this. Serve arranged around the meat.

Asparagus on Toast.

Cook the tops or tender portion of asparagus in slightly salted water to cover. Make a cream sauce and add the asparagus cut in short bits and spread on slices of toasted bread.

"Don't wait until the iron's hot,
But make it hot by muscle;
Don't wait for wealth your father's got,
Take off your coat and hustle."

REAL JOY.

I love to think of boyhood days when
I arose at four,
And fetched of water from the well
8000 pails or more,
And then I'd wake the harrow up and
pacify the plow.
I love to lie in bed and think I needn't
do it now.

I love to think of boyhood days when
I the porkers fed.
I used to fix their breakfast food ere
yet the sky was red.
I used to dry shampoo the horse and
manicure the cow.
I love to lie in bed and think I needn't
do it now.

HOMELY HINTS.

The skins of fruit should never be eaten, not because they are not palatable or digestible or are unhealthy, but on account of the danger arising from microbes in the skin.

The soiling caused by persons leaning their heads against a papered wall may be greatly lessened, if not obliterated, by laying a sheet of blotting paper upon the spot and passing over it a moderately warm flat-iron.

A kitchen convenience which is not present in every household is a pair of sharp scissors. Scissors are used to trim lampwicks—which is wrong—and to cut papers and string; but seldom for trimming bacon and ham rinds, skinning parts of fowls which need skinning, and trimming salads. These are proper uses for scissors, and the use of them saves much labor.

To renew cane chairs—If the seats have become limp and stretched, so that they sink in the center, they may be made as good as new, if none of the strips of cane are broken, by well washing them in hot water and then placing them in a current of air to dry. This causes the cane to tighten up, and when dry, the seat will be quite flat as when first woven.

To prepare and set things at hand for breakfast is very quickly done when the supper work is done up, and to put back chairs, pick up papers and scraps in the sitting room just before going to bed takes scarcely more than a minute, and makes it seem a much more comfortable place in the morning, besides allowing one to make his way through it without delay or mishap if called up hastily in the night. Mothers, by all means, teach your daughters this thrifty way of doing things over night. Such a habit, once formed, will not be easily broken, and will help them to begin every day of their lives more easily and cheerfully.

GEMS FROM ROOSEVELT.

From President Roosevelt's address to the graduating class of Michigan Agricultural College recently, we note:

"The greatest of crops is the crop of children."

"The bulk of the people should work with both head and hand."

"We must develop a system under which each citizen shall be trained as an economic unit."

"No growth of cities and no growth of work can make up for loss in number and character of farming population."

"We must have a higher plane of efficiency and reward with consequent increased growth of dignity for the wage worker."

"Progress cannot permanently consist in abandonment of physical labor but in the development of physical labor so that it shall represent the work of the trained mind in the trained body."

Jump on a Keen Kutter Fork—put any Keen Kutter hand farm tool to the severest test you can think of. You discover an elastic toughness which restores tines, blade or handle to original form and position without weakening the tool. *Toughness* is one of the good qualities of all

KEEN KUTTER

E. C. SIMMONS KEEN KUTTER TRADE ST. LOUIS MARK U.S.A.

tools, but not the only one—Forks, Rakes, Hoes, Scythes, Spading Forks, etc., as well as bench tools—Planes, Axes, Hatchets, Saws, Augers, Bits, Braces, Hammers, Gouges, Chisels, Drawknives, Gimlets, Squares, Bevels, Files, etc., and a long list of household cutlery, are made only of *best* steel, have long-lasting keen edges and tines, and give better wear and service than other tools. *Look for the trade-mark.* If not with your dealer write us.

"The Recollection of Quality Remains Long After the Price is Forgotten." E. C. Simmons, Trademark Registered.

SIMMONS HARDWARE COMPANY (Inc.), St. Louis and New York, U. S. A.

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We are prepared to extend to the small depositor the same personal and careful attention that we do to our largest accounts.

Do You Know You Owe

Yourself an Acetylene Gas Machine that you may have the conveniences and pleasure of the best known light and gas to cook and iron with on the hot days that are coming. We have a good machine that works right, and our best friends are our customers. We want more friends! You will be one if we serve you! Write to us just as though you had known us all your life, and we will be glad to answer or send some one to see you.

Yours for light,

20th Century Light Co.

609 E. Seventh St., Los Angeles, Cal.

LINERS

Liner Advertising
Advertisements in Liner Column 1¼ cents per word. Eight words to a line. No advertisement taken for less than 25 cents.

EGGS FOR HATCHING.

AT REDUCED PRICES BALANCE OF season from my prize winning Barred Rocks; won all special and 13 regular prizes on Barred Rocks at late Los Angeles show. Eggs from best pens, $2.50 per 15; $10 per 100. Can furnish any quantity. Also offer extra bargains in breeding stock. CHAS. E. SMITH, Gardena, Cal. San Pedro Interurban car to Smith's Crossing.

McKINLEY POULTRY FARM—BREEDERS of Buff and White Wyandottes. Member American Buff Wyandotte Club. Golden Seabright and Pyle Game Bantams. Eggs $3.00 and $2.00 per 13. Take San Pedro Interurban car to McKinley, first house north. BOX 11, R. F. D., Gardena, Cal.

BLUE RIDGE POULTRY YARDS, W. H. Brown, Prop., 128 Ave. 32, Los Angeles, Cal. Breeder of Blue Andalusians. Won more first prizes than all our competitors combined. All specials went to our strain. Eggs $1.50 and $2.00.

S. C. WHITE LEGHORN EGGS FROM THE bred-to-lay Blanchard strain. Large birds. $1.00 for 15; $6.00 per 100; Free city delivery. C. M. GIBBS, R. F. D. No. 4, Los Angeles, Cal. Phone W. 591

POULTRY.

SPECIAL SALE—TWO YARDS OF ABOUT 20 good Buff Wyandotte Pullets at $2.00 each. Order at once; satisfaction guaranteed. M. E. DILLINGHAM, San Gabriel, Cal.

SINGLE-COMB WHITE LEGHORNS, FINE white, large, birds; good layers. Hatching and shipping chicks. Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER. Ontario, Cal.

MACHINERY.

CHEAP FOR CASH—ONE 34-H. P. FAIRbanks Gas Engine in good condition, and can be seen in operation at our plant. AXELSON MACHINE CO., 1406 San Fernando St., Los Angeles.

FOR SALE—CHEAP FOR CASH—3-H. P. Hercules vertical gasoline pumping engine. 117 BRUNO ST. Los Angeles.

FOR SALE—A1 CONDITION 25-H. P. FAIRbanks-Morse at a bargain. P. O. BOX 678, Station C, Los Angeles.

DUCKS.

INDIAN RUNNER DUCKS—PURE BRED; no eggs equal them for table use; no bird lays as many eggs in one year. Place a dozen under that old hen. Eggs for hatching, 50c per dozen; $3.50 per hundred. JOHN W. LYON, E. Palm Ave., Gardena, Cal.

INDIAN RUNNER DUCKS—EGGS AND stock for sale. Eggs, $1.00 per 13; $5.00 per 100; stock, $1.00 up. Black Langshan prize pen, $2.00 per 13. CLYDE J. MOSS, successor to F. M. Bender, Corona, California.

POULTRY FOODS.

ARMOURS BEEF SCRAPS, MEAT MEAL, and Blood Meal for poultry feeding are highest in digestible protein. If your dealer does not handle them write us direct. Circular containing formulae free. THE ARMOUR FERTILIZER WORKS, 736 H. W. Hellman Building, Los Angeles.

TREES.

FOR SALE—4000 VALENCIA AND 1000 W. Navels; one year buds on three year roots, clean and vigorous; buds taken from bearing trees. F. E. CHAPMAN, R. F. D. Box 34, So. Craig Ave., Pasadena, Cal.

FARM LAND.

LAND BY WHICH YOU MAKE MONEY, because it costs but $18 to $25 an acre, with abundant water at 50c an acre. Easy terms. Grand crops. Good markets. Fare rebated. Address, W. R. GILSON, 333 I. W. Hellman Bldg., Los Angeles.

COFFEE.

SAVE ONE-HALF BY BUYING DIRECT. Ten lbs. Aroma Coffee $2.30 or 10 lbs. Fancy Ceylon or Japan tea $3.00. Freight prepaid. Money refunded if not satisfactory. Send P. O. order or check. F. W. SPARR, 114 E. Market St., Los Angeles, Cal.

LADDERS.

"CHAMPION ORCHARD LADDERS" ARE the very best. Selected spruce. Malleable iron heads, painted. Light and strong. Many of the largest dealers handle them. Sizes, 6 to 20 feet. Price, 27 cents per foot. F. O. B., San Jose. Write for full information and description. H. H. EDMUNDS & SON, 3 Story Road, San Jose, Cal.

MISCELLANEOUS.

FOR SALE—AT A BARGAIN—GOOD LOOM for weaving rag carpets or rugs. Address, 1102 PARK AVE., Alameda, Cal.

BEST PILL ON EARTH

People who are sick with dyspepsia, headache and biliousness, having yellow complexion and pimples, do not want to experiment, but want a medicine that has had the test of time. We have cured these diseases for 25 years with DR. GUNN'S IMPROVED LIVER PILLS. They drive out the cause of sickness, making the complexion clear and healthy. 25cts. a box at druggists, or by mail. Write Dr. Bosanko Co., Philada., Pa. Sample Free.

ONLY ONE FOR A DOSE

A party of Sunday-school picnickers from Petaluma sent messages back to their home friends by carrier pigeons.

The Maple Grove Creamery was started at Hanford last week.

The Produce Markets

Los Angeles Markets

LOS ANGELES, June 12.

Some fruits like apricots, cantaloupes and others approaching more nearly their regular season have shown a slight lowering of quotation, but in the main quotations are fully maintained and market is firm. Butter shows the most marked advance. It is now 12½ cents per roll higher than last year at this date. It is rumored that the amount of butter stored is also far short of last year.

Butter.

Butter now commands 57½, an increase of 2½ cents in the past week. From the buyers' standpoint it is said that the butter situation will become serious this year. In speaking of the probable price of butter during this summer and the early part of the coming winter the majority of dealers say they do not dare make predictions, but one or two of the leading butter men say they fear a butter famine during the latter part of the summer and early in the winter before the rains have increased the supply.

Creamery extra	57½
Creamery first	55
Dairy	24

Cheese.

Cal. Young America, per lb	19
California Anchor	18
Cal 3-lb. hand	20
Northern fresh	15¾
Domestic Swiss	23
Imported Swiss	30½

Eggs and Poultry.

Eggs are still going upward and are in keen demand. It is predicted that 26 cents will be reached within a day or two.

The prices given are those of the commission man to the retailer.

Eggs, local, candled	24½@25
Eggs, case count	23½@24

Poultry shows a material decline. **The following are average prices which dealers pay to producers for live weight:**

Hens, per lb	12
Young roosters, per lb	16
Fryers	18
Broilers, per lb	18
Old Roosters	7
Turkeys	17
Geese	12
Ducks	13
Squabs per doz	1.50@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, 200 lbs	7.50@8.00
Prime steers	4¼@4½
Hiefers	3½@4
Calves per lb.	5
Sheep, ewes, per head	4.75@5.00
Lambs per head	4@4.25
Wethers	5.50

Potatoes.

Old potatoes are nominal, but very few being left on the market. Such quotations as are made are the same as last week. New crop shows a slightly lower quotation.

Colorado	2.00
Minnesota	1.75@2.00
Oregon,	1,80
New	1.75@2.00

Onions.

Silver skins per ctl	2.00@2.25
Nevadas	2.50@2.60
Texas	1.75@1.80
Imperial per crate	1.30
Imperial per sack	1.95
Garlic	12

Vegetables.

Asparagus lb	12½
Artichokes	30
Beets per doz	30@40
Bell Peppers green lb	20
Beans, wax	4@6
Beans, green	3@5
Cabbage, sack	70@75
Chili peppers, green	20
Cucumbers per doz	35
Corn per doz	35@40
Cauliflower	1.50
Carrots per doz	30@40
Egg Plant per lb	25
Green Onions, doz bunches	10@30
Lettuce, per crate	50@75
Mushroons per lb	1.00
Rhubarb per box	1.50@1.75
Radishes per doz	15@20
Summer squash, crate	50
Tomatoes, Mexican, crate	1.00@1.50
Turnips, doz bunches	40
Peas, sugar, per lb	4@6
Spinach, per doz	10@15
Water Cress per hundred	40

Citrus Fruits.

Valencias	1.50@2.75
Navels	1.25@2.50
Grapefruit Seedless	2.00@2.50
Grapefruit Seedlings	1.25@1.35
Seedlings	1.25@1.50
Lemons, fancy	2.00
Lemons, choice	1.25@1.50
Tangerines, halves	1.50@1.75

Fresh Fruits.

Apples, Ben Davis	1.50@2.00
Apples, Red Astrachans, box	90@1.25
Pearmains	1.75@2.00
Apricots	1.75@2.25
Blackberries	4
Currants per 4 bskt crate	1.75
Cherries, loose	11@15
Cherries black	1.25@1.50
Cantaloupes, special	75@1.00
Cantaloupes, Ponies	2.50@2.75
Cantaloupes, standard	3.00
Figs black per lb	17@20
Gooseberries	7@9
Logans	4@5
Loquats	3@6
Peaches, per box	75@1.50
Plums	1.50
Raspberries	7@8
Strawberries	4@6
Watermelons, per lb	3@4

Dried Fruits.

The dried fruit market is on the rise. Apricots, if there were any futures, would command up somewhere above 20 cents. As it is canners are picking up what few there are in the country at prices that preclude any drying.

Evap. Apples, fancy per lb	8½@10
Apricots	20@22
Peaches	12½
Pears	13
Prunes, 40s to 50s	7½@8
Prunes, 50s to 60s	7
Prunes, 60s to 70s	6½
Prunes, 70s to 80s	6
Raisins, layers, 3 Crown, 20 lb bx	2.00
Raisins, clusters, 4 Crown, 50 lb bx	4.00
Raisins, clusters, 4 Crown, 20 lb bx	2.25
Raisins, clusters, 5 Crown, 20 lb bx	2.75
Raisins, clusters, 5 Crown, 5 lb bx	90
Raisins, clusters, 6 Crown, 20 lb bx	3.50
Raisins, clusters, 6 Crown, 5 lb bx	1.00

Beans, Dried

Limas per ctl	5.25
Pink No. 1	3.00
Lady Washington	3.00
Small White	3.20
Black Eyes	5.75@6.00
Garvanzas	5.75@6.00
Lentils	12½

Honey

A short talk with J. B. Jacobs of the Simon Levi Co. developed the fact that while there will be a short yield of honey there will still be a fair output. It is thought the Eastern shipments will exceed those of last year.

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted White	6
Light Amber	5@5½
Comb, water white, 1-lb. fms	12@15
Light Amber	10@12

Nuts.

Almonds per lb	19@25
Peanuts, Virginia	9
Peanuts California	6@7
Walnuts, No. 1 S. S.	14@15

Hay.

Barley, No. 1	14.50@16.50
Barley, No. 2	11@12
Alfalfa, northern per ton	13.50@14.00
Plain Oat No. 1	17@19
Wheat No. 1	12@14

Grain.

Purchasing prices f. o. b., Los Angeles are:

Wheat, new, per cwt	1.70@1.75
Wheat, Sonora	1.52½@1.57½
Barley	1.17½@1.22½
Corn, Eastern, sacked	1.50

Feed Stuff.

Selling price F. O. B. Los Angeles as follows:

Cracked corn	1.65
Shorts	1.45
Bran	1.30
Egyptian corn	1.65
Rolled Barley	1.40
Feed meal	1.70

The representatives from Yuba county to the Irrigation congress are G. W. Chapman, W. R. Chapman, A. P. Craner, C. W. Thomas, Geo. W. Pierce, R. J. Schmeiser, W. H. Gregory and H. Stitt.

Five-cent raisins has made Fresno people so happy and liberal that a great Fourth of July is promised through a big fund which has been raised.

San Francisco Markets

Butter.

SAN FRANCISCO, June 11.—Dairy Market is well sustained; a large amount of business is transacted and quotations are a couple of cents above last week.

California, ex per lb	25
California, firsts	24
California, seconds	23½
Packing Stock	22

Cheese.

California, Young America, fancy	14½
California, flats, fancy	13½
Eastern, fancy	18

Eggs and Poultry.

Only the slight rise of ½ cent can be chronicled in the quotations on eggs this week, but a firmer market prevails, with promise of continual advance.

Fresh Ranch Eggs	20
Eggs, first, per doz	18½
Eggs, seconds, per doz	17
Eggs, thirds	16

Suplies of poultry consist of the left over stock of last week, but as the receipts from the East are indefinitely withheld, there are some chances of the market becoming normal within a few days.

Hens per doz	4.50@5.00
Hens large	5.50@6.00
Young Roosters, large	8.00@9.00
Young Roosters, small	6.00@7.00
Old Roosters	4.00
Fryers, per doz	5.00@7.00
Broilers, per doz	3.50@4.00
Ducks, young	5.00@6.00
Geese, per pair	1.75@2.00
Turkeys, per lb	16@19
Pigeons	1.25@1.50

Live Stock.

Steers No. 1	7½@8
No. 1 Cows and Heifers	6½@7
Hogs, 80 to 200 lbs	7½
Hogs 200 to 300 lbs	7
Calves per lb	4@5
Lambs yearlings	6½
Wethers, No. 1	5½@6
Ewes, No. 1	5@5½

Potatoes

The potato market is firm and with supplies on hand kept small by light receipts and will probably remain so. Rhubarb maintains a favorable demand and the figures of last week are held steadfast. Beans are improved a trifle for some grades and the Wax varieties meets with much better business than the ordinary grades. There are but few hot-house Cucumbers for sale as trading is mostly in the Marysville grades. Squash is a trifle better in request than during the few past days and at nominal rates.

Salinas Burbanks ctl	2.50@2.75
Oregon Burbanks	2.00@2.75
Rivers	1.00@1.60
New potatoes	1¾@3

Vegetables.

Asparagus	6@12
Cucumbers, per box	75@1.00
Chili peppers green lb	15@25
Green peas per lb	2½@3
Squash per box	75@1.25
Peppers Green Bell	20@25
Rhubarb, per box	1.25@1.50
Tomatoes Mexican	1.00@1.25
Tomatoes, California	1.25@2.25
String beans	3@5

Onions.

Onions new box	75@2.00
Onions yellow ctl	2.00@2.50
Onions white ctl	1.75@2.00
Onions, new Reds	1.90@2.00
Onions Brown Australia per lb	3@3½

Citrus Fruits.

The market for citrus fruits, while dull, gives some indications of bettering shortly.

Lemons	1.00@4.00
Navels	1.50@3.00
Seedlings	1.25@1.75
Grapefruit, seedless	1.75@3.00
Limes	4.50@5.00

Fresh Fruits.

There are as yet no more figs to be had, and the supply of watermelons is nearly all gone. About everything in the fruit line is changed a little in the prices, but remains within nominal boundaries. The excessive stock of cherries on hand is as yet quite plentiful, although greatly less in quantity than during the week preceeding and the amount of inquiries compared with receipts indicates that there will soon be a sparsity. Berries maintain the same trade condition as for the few past days.

Apples, per box	1.25@1.50
Apples, new per box	50@1.50
Apricots, per box	1.00@1.50
Blackberries, per crate	2.00@2.50
Currants, per box	50@75
Cherries, blk	75@1.25
Cherries, white per box	75@.80

Cherreis, per lb.... .....8@10
Gooseberries, per lb.... .....6@9
Logans, per chest.... .....6.00@7.00
Melons, special.. ....1.00
Melons, Ponies..... ....3.50
Plums per box .....75@1.25
Peaches, per box.. .....75@1.25
Raspberries per chest.... ..10.00@12.00
Strawberries, per chest.. ...8.00@12.00
Strawberries, crate.....1.00@1.50
Watermelons, each.....1.25

Dried Fruits.

Apples (evap.) ..... 6½@8
Apricots, per lb new..... ....18@20
Figs, white ..... 4@5
Prunes, four sizes ..... 3@4½
Peaches ..... 10@13
Raisins, seeded (1906) ..... 3½@10
Thompson, unbleached 7½
Thompson, bleached ..... 9@11
Pears ..... 7½@12½

The f. o. b. quotations on the 1907 raisin crop, October delivery, have been announced as follows: Fancy seeded, 12-ounce cartons, 6 5-8c; Choice seeded, 16-ounce cartons, 7¾c; Choice seeded, 12-ounce cartons, 6¼c; Loose Muscatels, 3-crown, 6 3-8c; Loose Muscatels, 2-crown, 5¾c; Seedless Muscatels, standard, 5 5-8c; Seedless Sultanas, unbleached, 5¾c; Seedless Thompson's, unbleached, 6¼c; Imperial Clusters, 3-crown, $3.00; Dehesa Clusters, 5-crown, $2.50; Fancy Clusters, 4-crown, $2;London Layers, 3-crown, $1.40; London Layers, 2-crown, $1.30.

Beans, Dried

Limas, No. 1.... .....4.75@4.90
Pink .....2.30@2.50
Large White..... .....2.40@2.65
Black Eyes .....4.90@5.00
Red Kidneys .....3.50@3.75
Bayo, ...2.85@3.00

Hops.

Fancy, 11c; choice, 8@10c; prime, 7@8c;common, 5@6 per lb.

Nuts.

Almonds, new ..... 17½@18
Peanuts, California ..... 5½@6½
Walnuts ..... 12@16

Honey

Clear White Comb ..... 16@@16½
Amber ..... 12@15
Extracted ..... 5@7
Beeswax, per lb ..... 25@30

Hay.

Alfalfa, local ..... 11@13.50
Oat ..... 18@20
Wheat, No. 1 ..... 22@24
Wheat, No. 2 ..... 13@17

Grain.

The prices for wheat which now prevail in the market are certainly a barrier to extensive trading. The situation has been a sellers' market for weeks, but the buying element has taken only such quantities as they actually were obliged to have for immediate wants. Some grain is now being cut in the interior, but is it mostly barley and samples of new crop are more numerous on the exchange.

Wheat, No 1.... .....1.50@1.52½
Barley, No. 1.... ....1.20@1.22½
Corn, small yellow.. ..... 1.55@1.60
Corn, yellow..... ..... 1.45@1.50
Oats, White.... .....1.55@1.75
Oats, Red.... ....1.60@1.75
Bran, per ton.... .....20.00@22.00
Straw, per bale ..... .50@.70
Feed Corn Meal, per ton .. 32.50@33.50
Cracked Corn, per ton ..... 33@34
Oil Cake Meal, per ton....40.00@41.50
Cocoanut cake, per ton.....27.50@28.00

Citrus Market

LOS ANGELES, June 11, 1907.

Oranges are still going forward at a rapid rate and holding up in quality and price. A very few navels yet remain in California, but that variety is practically cleaned up.

Of sweets, mikes, seeds, bloods and others there are possibly 500 cars. Then comes the clean up of Valencias with perhaps 2000 cars, which is about 25 per cent greater than last year.

Some Valencias are going out now but mostly on special orders.

Lemons are in the dump yet and will continue to be until that eastern cold weather lets up. Foreigns continue to come but largely a very inferior stock which, in the present condition of market, go begging.

Shipments.

Shipments of Citrus fruits to date are 22,508 cars, of which 2181 are lemons. To same date last season 22,299 of which 2576 were lemons.

NEW YORK, June 10.—The market is very strong and higher on navels. Forty-one carloads of oranges and one of lemons sold today. Weather cloudy and threatening.

NAVELS—
Clover x c Redlands O G A.....$3.25
Standard, st National Or Co..... 3.45
Orchard or National Orange Co.... 4.10
Flower or Upland District..... 2.70
Bishop fy Ely-Gilmore Ft Co..... 1.40
Clover x c Redlands O G A..... 2.75
Sweetheart x f H G Ft Ex..... 3.45
Eagle x c H G Ft Ex..... 3.55
Gold Buckle x f R. H. Ft Ex..... 3.60
Lochinvar x c H G Ft Ex..... 3.50
Golden Rule x c Rivsd Ft Ex.... 3.15
Quail x c O K Ft Ex..... 2.70
Parrot x c S A Ft Ex..... 2.65
Eagle x c H G Ft Ex..... 3.25
Grayhound ch S. A. Ft Ex..... 2.55
Fiesta x c Rivsd Ft Ex..... 2.55
Partridge x c C C U..... 2.65
Anemone st C C U..... 1.50

SWEETS—
Rose x f Redlands O G A..... 3.40
Rose or Redlands O G A..... 3.05
Slover Mountain or Colton Dis.... 3.00
Independent or Highland Dis..... 3.00
Slover Mountain or Colton Dis.... 3.05
Slover Mountain st Colton Dis.... 2.60
Slover Mountain or Colton Dis.... 2.90
Rook ch Ely-Gilmore Ft Co..... 1.75
Solano or Stewart Ft Co..... 2.55
Triumph .... C C U..... 1.90
Whittier x c Redlands Junction.. 2.70
Fountain ch Speich & Co..... 2.60
Peacock x c Worthley & Strong.. 2.10
Amethyst st C C U..... 1.75

ST. MICHAELS—
Red Shield x c A C G Ft Ex..... 3.30
Green Crown st A C G Ft Ex..... 3.25
Solano or Stewart Ft Co.....3.50
Triumph .... C C U..... 2.70
Whittier x f Redlands Junction... 3.55
Santa Fe st Speich & Co..... 3.10

SEEDLINGS—
Titus Ranch x c S Marino Gr Pk A 2.60
Solano or Stewart Ft Co..... 2.60
Flamingo x c C C U..... 1.05
Triumph .... C C U..... 1.55
Lilac 1.85
Lighthouse 1.80
Conqueror 1.95

VALENCIAS—
Red Sehield 3.20
Green Crown 2.50

BLOODS—
Solano ....3.15@ 2.95
Peacock ....2.35@ 2.65

GRAPEFRUIT—
Slover Mountain 3.85
Blue Seal 2.70
Triumph 2.00
G Orchard 2.85
Rough Rider 3.70

ST. MICHAELS (Halves)—
Solano 1.70

LEMONS—
Corwins' fy 3.15
Choice 2.65
Silver Buckle 3.30
Triumph 2.15

PITTSBURG, June 10.—Market weak on account of condition of fruit. Weather favorable. Eighteen carloads of oranges and one of lemons sold.

NAVELS—
Red Globe x c Rivsd Ft Ex.....$2.85
California Orange st Rivsd Ft Ex.. 2.55
Rivsd Orange st Rivsd Ft Ex..... 2.15
Riverside st Rivsd Ft Ex..... 3.30
Lochinvar x c R H Ex—E Highl'd 3.25
Belt st R H Ex—E Highland..... 2.90
Belt st R H Ex—E Highland..... 2.85
Jasmine st D M Ex Duarte..... 2.65
Pyramid or Strachan Ft Co..... 2.80
Owl st O K Ft Ex..... 2.05
Hunter st A C G Ex Charter Oak.. 1.65
Red C x c Covina Ex..... 2.65
St. Bernard c Covina Ex..... 2.50

SEEDLINGS—
Titus Ranch 3.15
Conqueror 2.70
Criterion ....2.95@ 2.65
Jasmine 2.30

SWEETS—
Pansy 2.70
Golden Strand 2.40
Owl 2.35

BUDDED—
Riverside Orange ....2.30@ 1.60

VALENCIAS—
Bear and Eagle 3.30

LEMONS—
Crocker-Sperry 2.85
Choice 2.15

BLOODS—
Conqueror 3.15
St. Bernard 2.45

ST. MICHAELS—
Red C 2.85

BOSTON, JUNE 10.—Market is easier. It is raining. Twenty-five carloads sold; twenty-two on track.

NAVELS—
Orchard or National Or Co.....$4.10
Standard st National Or Co..... 3.50
Fountain c Speich & Co..... 2.00
Santa Fe st Speich & Co..... 1.80
Golden Rule x c Rivsd Ft Ex..... 3.40

ST. MICHAELS—
I X L 3.50
Slover Mountain 3.25
Premium 2.95
Buena 2.60
Rossmoyne or 2.55
Homer 3.65
Camel 3.45

VALENCIAS—
Blue Mountain 3.55

SWEETS—
A Brand 3.50
Independent f 3.00
Standard 2.40
Anemone 2.10
Family 2.45

LEMONS—
Slover Mountain 2.30

GRAPE FRUIT—
I X L 3.30
A Brand 3.20
Tallyho 3.50
Puritan 3.95

SEEDLINGS—
Family 1.90
Camel 2.20

PHILADELPHIA, June 10.—The market is steady and weather warm and cloudy. Thirteen carloads of oranges and two carloads of lemons sold here today.

NAVELS—
Golden Rule x c Rivsd Ex.....$3.05
Golden st Rivsd Ex..... 2.60
Belt st R H Ex E Highland..... 2.65
Violet x c D M Ex Duarte..... 2.95

SWEETS—
Anemone 2.60
Flamingo 2.30
Artillery 2.25
Stag 3.15
Hunter 2.95

SEEDLINGS—
Success 2.75
Popular 2.55
Flamingo 1.25
Pine Cone 2.90
Arrowhead 2.30
Pointer 3.70

ST. MICHAELS—
Violet 3.65
Jasamine 3.40

LEMONS—
Crocker-Sperry 1.65
Choice (badly wrecked) 1.65

CINCINNATI, June 10.—The market is steady and the weather warm. Six carloads on tracks.

NAVELS—
Lark c O K Ft Ex 2.60
Owl st O K Ft Ex..... 2.30
Colonel x c Or Cash As..... 2.95
Coyote ch O K Ft Ex..... 2.30
Blue Jay st O K Ft Ex..... 1.75

SWEETS—
Sunshine 3.10

LEMONS—
Royal Blue 2.35

THE WORK OF THINNING BEETS

As soon as sugar beets are up they should be blocked and thinned and any delay in performing this work is likely to reduce the tonnage. A machine has just been invented by some Denver men for facilitating the work, but it will not be on the market this season. Blocking consists in cutting out the beets so that they stand in little tufts six or eight inches apart. This is usually done with a hoe but the machine mentioned will be able to block several rows at the same time and cover twenty acres a day. The thinning should immediately follow the blocking and must be done for the most part by hand. It consists in removing all but one of the young beet plants from these little tufts and is the most tedious and the most expensive single operation connected with sugar beet growing.

Single Germ Seed.

The fact that nearly all the beet seed balls contain from two to seven seeds makes it impossible at present to avoid the thinning process. It is not probable that any implement can be devised that will satisfactorily remove the unnecessary seedlings without injuring the one that remains. The only solution for this problem seems to lie in the development of a plant that will produce only single germ seed balls, but this consummation is far off and we will have to get down on our marrow bones for a few generations longer. Next to thinning, weeding is usually the most expensive operation, since this also must, as a rule, be done by hand. The cost of this process, however, depends very largely upon the condition of the soil with respect to the presence or absence of weeds and weed seed before the beets are planted.

Suppress the Weeds.

In addition to hand weeding, hoeing and cultivating are important factors in the suppression of weeds. It is usually necessary to hoe the beets once or several times and the number of cultivations will depend upon the conditions of the soil and the weather. The object of hoeing and cultivating is two fold—the destruction of the weeds and the conservation of moisture. In visiting the various sugar beet sections one cannot fail to be impressed with the number and size of the weeds that are allowed to thrive in some places while other localities are almost entirely free from weeds of any sort.

In some sections weeds of various kinds line the roadway for miles, scattering their numberless seeds by all the methods with which nature has provided them. In most of the general farming operations weeds are not as costly as they are in sugar beet production; hence this subject has not received in all communities the attention it deserves. The sugar beet grower must realize that to suppress and control the weeds will greatly reduce the cost of raising the crops. This principle of agriculture, as well as many others, might profitably be taught in our country schools but it probably never will be.—Denver Field and Farm.

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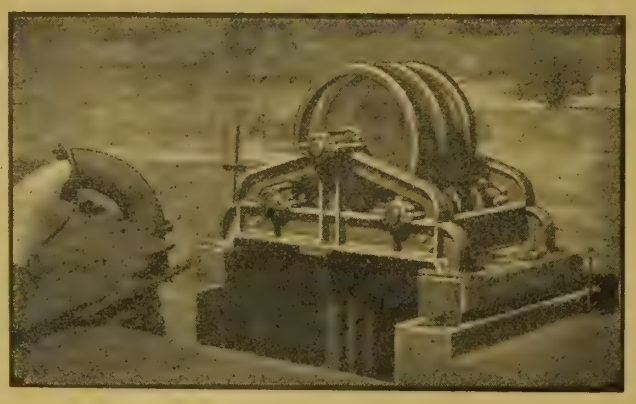
Its manufacturers speak more at length of its merits on page 610 of this issue.

Among the many new introductions in horticulture and agriculture by the farmers at Elk Grove, Sacramento co., is a half an acre of rice, twenty acres of pistachio nuts, and one farm is experimenting with ninety-eight varieties of strawberries.

Visalia began shipping its green fruit output this week.

Addison Double Plunger Pump Head



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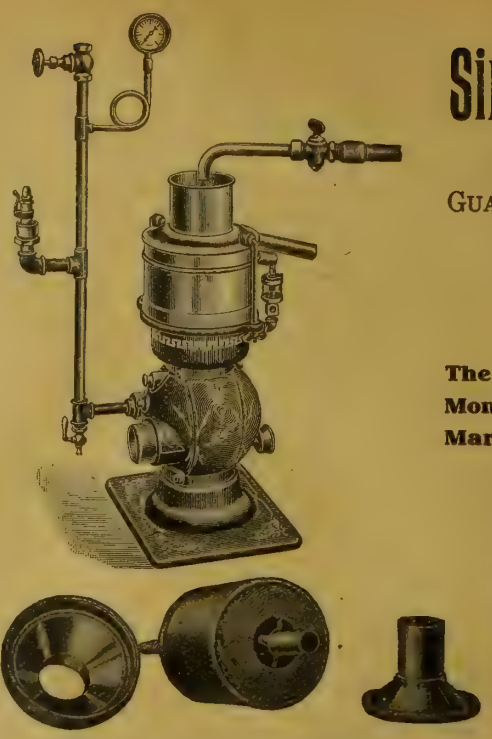

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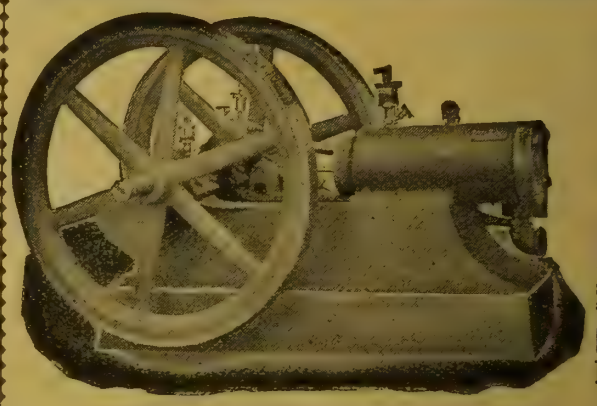

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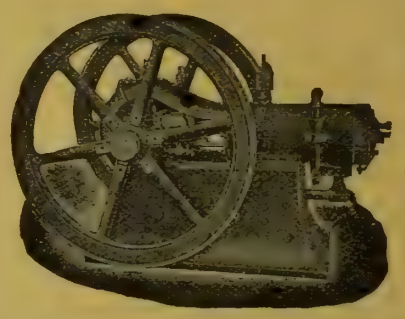

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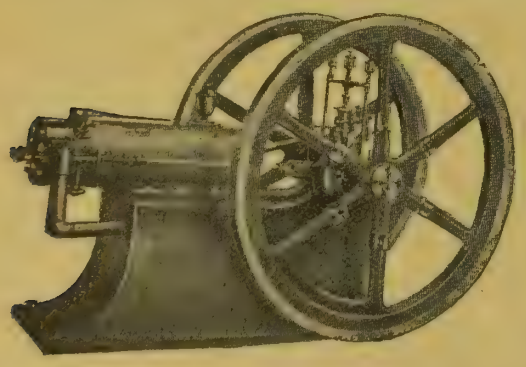

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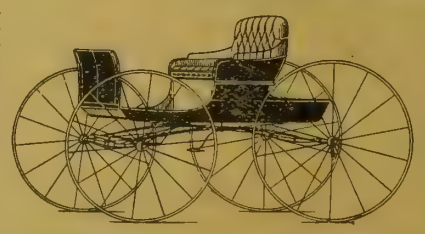

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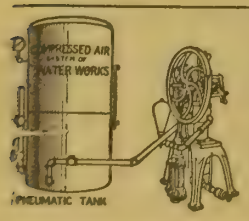

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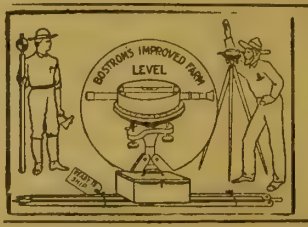

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California Cultivator

Los Angeles June 20 1907 San Francisco

The White Fly in California

The Life Habits and History of the New Florida Pest Which Will Mean Fearful Financial Loss to This State Unless Controlled Immediately

THE white fly has stirred up the fruit growers of the State as no other event in fruit growing lines has in years. Interest is great on all sides, especially so with the citrus growers. What will be done is asked on all sides and the feeling prevails that strong action must be taken at once. Some advise "immediate fumigation and spraying of every shrub and tree in Marysville." Others say, "Wait till winter when results will be better." Still others say, "Cut and burn every shrub and tree in Marysville rather than have this pest escape to the rest of the State to do its damage by millions of dollars; the State can well afford to pay to the citizens there any price for their trees than to suffer this calamity."

We believe strong and early action will be taken in a thorough clean up.

The White Fly
Greatly Enlarged

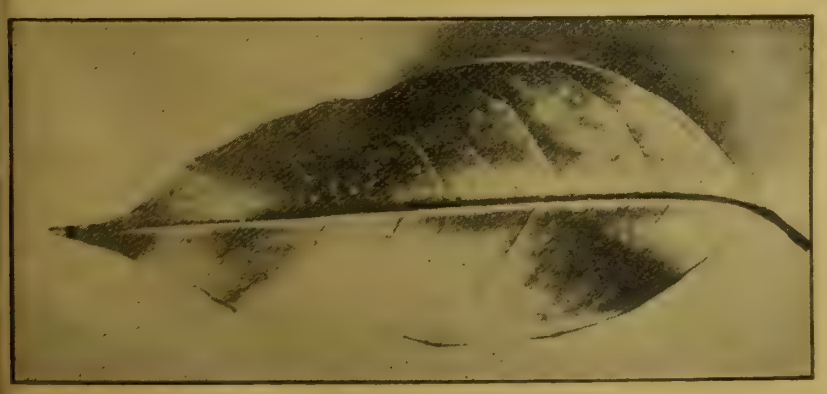
The StateUniversity is early in the field with information as to the gravity of the situation with Circular No. 30, "The White Fly in California," by C. W. Woodworth. The professor has been in the field working with the pest in Florida and now after thorough inspection at Marysville says there is no question whatever that it is the true Florida fly.

From this circular we quote:

A Serious Situation.

The white fly has at last become established in California. The most destructive insect in the citrus groves of Florida is this species of white fly, the Aleyrodes citri. It is considered by growers there as much more injurious than any of the scale insects attacking these fruits. Our trees were supposed to be free from the pest, but now a well established colony has made its appearance at Marysville at a center of travel by both steam and electric railways where the conditions seem particularly favorable to its spread over the State.

The seriousness of these facts to the citrus industry of this State



The White Fly on a Leaf. Natural Size.

renders it imperative that full publicity be given them in order that the proper steps may be taken to meet this emergency. We are not sure that the insect is confined to this one locality. Every one who has trees should carefully inspect them and submit all suspicious specimens to some one capable of accurately identifying them. The Experiment Station will be glad to examine and report on any that may be submitted for this purpose. It may be entirely possible to eradicate an insect before it has become widely established, but it will, if allowed to increase, become too widely distributed to effectively handle.

Our Climate No Protection.

Many have been very apprehensive of the danger of introducing this insect from Florida and have been instrumental in having most stringent laws enacted preventing the importation of anything from that State liable to be infested, while others have maintained that the insect could not live in this climate at all. In support of this idea it has been claimed that the insect must have been introduced into the State many times on nursery stock before these laws went into

Red Scale on Upper Side of Leaf
Which may be mistaken for the White Fly

effect and since that time on plants that escaped the attention of the inspectors. Many other species of white flies are able to live in California, however, including at least one injurious species. We do not have to speculate any longer on this matter since the insect in question is now not only existing here but thriving. Moreover, the insect is not appearing in the most humid parts of the State, but in the interior where the black scale is unable to thrive, that is, in a climate comparable to Riverside.

Though we now know that the white fly does live and thrive in our climate in the city of Marysville, there are those who still believe that our orchards are not menaced, still arguing on the basis of the climatic differences between California and Florida. The red scale, the black scale and the purple scale are all Florida insects and have not found our climate impossible. Possibly the white fly may prove to be different, but it does not seem the part of wisdom to permit the white fly to have free access to our citrus orchards on the chance that it may not thrive there.

Life History.

The white fly must have been in California at least a full year,

Continued on Page 643

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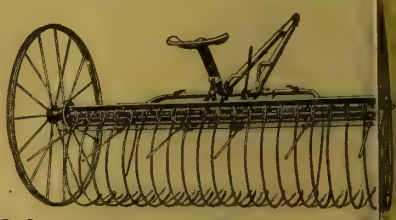

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Vol. XXVIII—NO 25 Los Angeles, California, Thursday, June 20, 1907 Subscription $1 a Year

To Prevent Decay of Citrus Fruits

Instructive Preliminary Report of G. Harold Powell, in Charge of Field Investigations in Pomology in California for the Bureau of Plant Industry, Department of Agriculture

An investigation has been made of the decay in unbrushed and in brushed fruit free from visible mechanical injuries, in apparently sound fruit washed in clean water, in fruit washed in dirty water infected with blue-mold spores, and in fruit with each orange injured by the clippers, by a stem puncture or by some other type of visible abrasion. This fruit has been held packed two weeks in the packing-houses and has not been shipped. This line of work has extended over a period of three months and has been carried on in about thirty packing-houses in the principal parts of the citrus belt of Southern California. An average of the data gives the following general result:

Decay in Fruit in Packing-House Tests.

Sound fruit, unbrushed, showed 2.5 per cent. decay; sound fruit, brushed, 6.2 per cent.; sound fruit, washed in clean water, 4.0 per cent.; sound fruit, washed in dirty water, 17.8 per cent.; mechanically injured fruit, 37.4 per cent.;

Decay in Fruit of Different Regions.

A leading object of these experiments has been to determine the comparative susceptibility to decay of oranges grown in different parts of the citrus belt of Southern California. A comparison of the data obtained in the coast region with that in the upper San Bernardino valley region shows a slightly greater decay in the coast region..

The data, which Mr. Powell gives, indicate that the fruit which is handled the least develops the least decay. An orange with an unbroken skin in healthy condition and not overripe is practically immune to decay. The rot usually finds its way into the fruit through an abrasion or some other type of weakness in the skin. In commercial practice the fruit varies from sound to 50 per cent. or more injured when it is packed, the injuries resulting from clipper cuts, stem, gravel and insect punctures, scratches and other types of abrasion caused by carelessness in handling the fruit in the groves and in the packing-houses. Brushing the fruit probably increases the decay by inoculating injuries already present in the skin, or by actual injury when the brush is severe in type or is improperly regulated. Washing the fruit in clear water is not particularly injurious, but in commercial practice the water becomes infected with the spores of the decay which are carried into injured or weakened spots under conditions that are favorable to the vigorous development of rot. The greatest amount of decay develops in the mechanically injured oranges.

Investigation of Decay in Fruit During Shipment.

In the shipping investigations about two hundred shipments of fruit have been sent to New York under ventilation, icing and pre-cooling followed by standard icing, the fruit going forward at different lengths of time after packing.

Most of the shipments have included duplicate lots of apparently sound brushed or unbrushed fruit, sound washed, the regular commercially-packed fruit and oranges showing visible mechanical injury. The different lots have been packed from the bins from which the commercial lots are taken by careful sorting into the types mentioned. The decay has been determined on arrival in New York by the inspection of every orange included in the shipment. The general trend of the result of the shipments is brought out in the following summary of table:

Fruit picked in March and held three days before shipping, brushed, apparently sound fruit, showed 2.2 per cent. decay; washed, 3.7 per cent. decay; commercially-packed fruit, 4.9 per cent. decay; while mechanically injured fruit showed 15.0 per cent.

Fruit which was held five to seven days showed under same handling respectevely, 2.7 per cent., 5.1 per cent., 5.4 and 22.7 per cent. decay.

These shipments were made from sections in which the decay is usually severe, in cool, variable weather, much of the fruit leaving California at a temperature below 55 degrees Fahr. The least decay occurs in the sound brushed fruit, the commercial pack develops more, as it contains more or less injured fruit, and the greatest amount develops in the injured oranges. In another direction, the decay is proportional to the length of time elapsing between the packing and the shipping of the fruit.

Another table is given in which said cars shipped from a section in which the handling of fruit is comparatively sound in which the fruit was held three days before shipping and brushed, sound fruit showed 3.7 per cent. decay; washed fruit, sound, 3.8 per cent; commercially packed, apparently sound fruit,, 9 per cent; while mechanically injured fruit showed 18.1 per cent. decay. When the fruit was held five days the per centage of decay was nearly doubled.

But in contrast with that is another table of cars shipped from sections where the handling of fruit is carefully done and instead of 9 per cent. decay there is reported a 2.4 per cent. decay, while in the fruit delayed five days, instead of 11.7 per cent. decay, is four per cent.

The least decay is in the fruit handled with the greatest care and is greatest in the injured fruit. It is also proportional to the length of time elapsing between the picking and packing and the shipping of the fruit.

Decay in Fruit Shipped Under Pre-cooling.

In the pre-cooling group the fruit has been cooled to a temperature of 35 to 40 degrees Fahr. before shipment. The cars have been iced before loading and have generally gone forward under standard icing. Pre-cooling differs from ordinary icing in having the fruit reduced to a low temperature before shipment. The ice of the car then has only to maintain the refrigeration in transit. In regular icing, the ice of the car has to reduce the fruit to a low temperature and then maintain the temperature afterwards. The temperature of the fruit may not fall below 45 to 50 degrees in warm weather under ordinary icing in the entire transcontinental trip. Under these conditions decay occurs during the early part of the trip while the fruit is warm. The table gives the result of a group of shipments from sections in which the fruit generally decays badly and in which the handling of the fruit is roughly done.

Commercially packed fruit showed 2.3 per cent. decay on arrival when the pre-cooling was delayed one day; 6.2 per cent. decay when delayed three days and 9.1 per cent. decay when the cooling was delayed five days. Note, that was the commercial pack and on all three groups the average decay was 5.9 per cent. decay while, in the same cars carefully brushed, but sound fruit, showed only 2.9 per cent. decay.

The decay in the fruit under pre-cooling is less than in the fruit under ventilation or icing with the least loss in the sound fruit and the greatest in the fruit that is mechanically injured.

Beginning in April and extending to the present time another group of pre-cooled fruit has been shipped to New York with 549 to 584 boxes in each car, an increase of more than 40 per cent. over the standard car of 384 boxes.

The fruit has arrived in market in practically sound condition when cooled quickly after packing. The boxes are piled in the car 7 rows wide and 3 tiers high, the boxes on the upper tier being laid down. In the warmest weather the temperature of the fruit in the top tier has risen from 8 to 15 degrees, the middle tier from 6 to 10 degrees and the bottom tier from 4 to 8 degrees. Even with the rise in temperature the average temperature of the fruit on arrival is usually lower than it is in a car under standard icing, under the same conditions of weather in transit.

The Cold Storage of Oranges.

During the season large commercial quantities of oranges have been under observation in cold storage in California in order to determine the effect of the storage on the fruit and on its subsequent shipping quality. The fruit has been held from one to three weeks, then shipped in cars iced before loading, followed by standard icing. The fruit has arrived in market in practically sound condition when stored quickly after packing. In a general way it may be said that the orange may be held in sound condition for weeks or even months at a temperature of 32 degrees Fahr. if the fruit is sound and is stored quickly after packing. The fruit should not be held over three or four weeks, as the flavor of the fruit begins to deteriorate in a warehouse cooled in the usual commercial manner at the end of about one month. After a storage of from two to three weeks the flavor of the fruit on arrival in the market is equal to that of fruit shipped under ventilation or icing.

The Keeping of the Fruit on Arrival in Market.

An investigation is in progress to determine the keeping quality in the market of sound brushed and washed fruit, commercially packed, and mechanically injured fruit when shipped under ventilation, icing and pre-cooling. The investigation is not far enough advanced to discuss in detail, but the following general statements may be of interest. Oranges that are handled with care arrive in good condition under the different methods of shipment and appear to have good keeping quality when withdrawn from the car. Oranges that are mechanically injured may decay in transit when shipped under ventilation in warm weather, or may decay on arrival in market in warm weather. Icing the fruit retards the development of decay in

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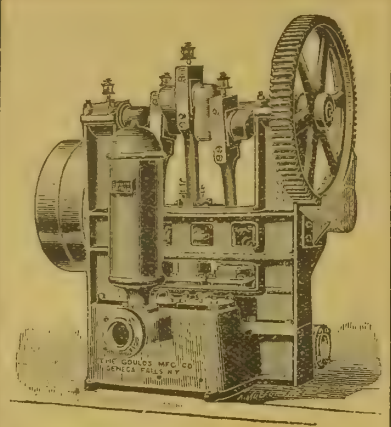

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Deciduous Fruit Culture

SOME FAILURES.

IN EVERY section of the State are to be found orchards that during the early life of the trees, were thrifty and gave promise of being the beginning of profitable plantations. After they had reached the age of four or five years, just when they should be bringing in a good income, they dropped back and continued to be less profitable each year. No reason was discernable why the change should be, but in most cases the fault was to be found in the subsoil. Heavy clay subsoils are not as a rule detrimental to the growth of deciduous trees. In fact, they are much more preferable than gravelly soils that allow a very rapid drainage. A sandy surface with a clay subsoil is an ideal one for most deciduous fruit trees. But the reverse condition is not. Trees planted with the latter condition of soils will end in failure, for it is impossible for the mature tree to keep up a healthy growth with the roots in a stratum that will not hold the requisite amount of water.

On the other hand, the surface soil may be ideal, but at a depth of two or three feet a hardpan will exist that will turn the roots, hold the water during wet seasons and, taking all things into consideration, it is impossible for the trees to make a growth that will give a crop and in many cases the tree will die outright. At one time we had this experience with peach trees. Late rains came and before the water had drained from the soil, warm sunny weather came, the trees bloomed profusely and every indication was for a big crop of peaches.

These trees were six and eight inches in diameter at the base. About the time the leaf buds opened, a decidedly sweetish odor and of a sickening nature, was perceptible among the trees. Within a week, a large block of trees was black and dead. Investigation showed that a depth of two feet, a heavy hardpan existed and water would drain into holes at that depth when the trees should be in leaf. The soil had often remained equally as wet many times but not so late in the season. The drains might have saved the trees, but there is nothing sure about it as the rainy season extended into the blooming period. Trees near an open drain died in the same way.

These facts show the folly of planting fruit trees on soil with a hardpan subsoil. Land with a clay subsoil should be drained. Even if it is not, there is a constant movement of water through it that is not possible through soil underlaid with hardpan. The use of such soil should be entirely confined to growing shallow rooted crops or annual crops such as grain and hay. If the surface soil is good it may grow berries at a profit.

FIGS IN CALIFORNIA.

The old Spanish padres brought to California fig cuttings which produced the only variety that was grown in this State for many years, perhaps a generation. Like all other fruits which they introduced, it was one of the best.

There are all grades of fruit of every class, some poor under all conditions, some poor under some, and extra fine under other conditions; there are others that are of excellent quality under most all conditions. It is this last named quality that characterizes nearly, if not all, the old Mission fruits. These Spanish priests did not know what conditions they would encounter, so they selected the "middle of the road" kinds and disappointment did not meet them at many turns in their horticulural pursuits. The Mission fig is now one of the best grown in California. Aside form the Calimyrna fig, it is perhaps as profitable as any when a wide range of territory is considered. It does not sour as readily as many other kinds and brings on the market the same price as some better appearing sorts.

The growing of figs is in its infancy in California, for it is one of the best paying crops and its uses are being extended each year. Great quantities are used in cracker factories and while the Calimyrna fig is the finest grown, it is to expensive to be put to such use. The cheaper varieties must fill the order for general use and the Mission fig is a favorite. It will mature its fruit to a high degree of perfection over the largest known area in California of any variety known. It will not sour where some of the more prolific kinds do. The tree is a rapid grower and does not seem to have a limit in size, in fact will send its branches down to the ground, take root and form new trees like a banyan tdee. When trimmed, it will make a magnificent tree, rivaling many large oak in size. It is very resistent to drouth and will continue to make a rapid growth where the White Adriatic, for instance, will suffer.

THE TUSSOCK MOTH.

The office of Experiment Station at Washington in the last Station Record refers to California Station, Bulletin 183 by A. H. Volck, which treats of the California Tussock Moth.

Hemerocampa vestuta has been unusually injurious to apple trees in the Pajaro valley and elsewhere in California during the past few years, especially in 1905. The damage was most severe where the egg masses had not been picked off and destroyed during the previous year. In orchards where this precaution was taken the loss was 23.5 per cent., as compared with 65.6 per cent. in untreated orchards.

The pest in question lives on live oak, lupin, apple and cherry trees as well as other plants. There is one generation annually. The egg masses are laid near buds and the larvas burrow into the fleshy tissue or the fruit. The only parasites obtained by the author were tachina flies, but the eggs are attacked by a minute parasite.

Preliminary experiments showed that this insect is very resistant to arsenical poisons. The larvae live for several weeks after feeding on foliage sprayed with arsenate of lead at the rate of 3 to 6 lbs, per 50 gal. of water. On account of the heavy coating of hair the caterpillars are difficult to kill by contact insecticides. Whale-oil soap killed some of them, but kerosene was apparently harmless. The best methods of control seem to be picking off the egg masses as soon as the leaves fall in the autumn and the use of sticky bands about the trunks of infested trees.

SETTLED.

The Oregon Agriculturist makes a statement which will cause every walnut grower to sit up and take notice.

"A man in Southern California is confident that he has found an effective preventive of walnut blight. It remains for him to prove the fact by thorough tests. His method of applying the remedy is different from those in use as he gets his preventive or remedy onto the trees in the form of steam."

We believe that the advice given by Mr. Felix Gillet, to use the seedlings of French varieties of the Persian walnut as stock on which to graft is good for Northwest growers. The California Black is certainly to be used with great caution until we know more about recent developments. The American Black differs quite materially in habits of growth from the Persian walnut, and its availability is an unsolved problem. —Oregon Agriculturist.

The American Pomological Society will meet in 31st session at Jamestown Exposition grounds September 24-26. The preliminary announcement calls attention to the displays of fruits from northeast and southeast, the expected attendance of prominent men from abroad, the reduced rates by water and rail, and the special facilities offered by the exposition. Two sessions only will be held each day, so as to leave the evenings free. Papers and discussions will be centered on a few important topics. Wilder medal awards will be made for meritorious new fruits and regional collections.

A consignment of 1000 barrels of apples has arrived on board the steamer Celtic from Liverpool. The apples were grown in Australia, picked there in March and shipped to London. The shipping of this consignment is in the way of an experiment. At this time there is a scarcity of home-grown apples. The western crop has been used up. The apples are the best that Australia produces, hand-picked and each apple is wrapped in tissue paper to protect it during the voyage. From Australia to London the apples came as general cargo in the hold, but from Liverpool to New York the barrels were placed in the refrigerating compartments.

The standard remedy for the currant worm is white hellebore says Coleman's Rural World of St. Louis. This may be mixed with water at the rate of 1 ounce to 2 gallons of water and sprayed or sprinkled on the leaves or applied dry, either pure or mixed with flour. There is absolutely no danger in using white hellebore, for while it acts as an efficient poison to kill the currant worm, it may be freely used at any time, even on the ripening fruit without danger. After the fruit has formed it is unsafe to use Paris green. Careful watch must be kept for the worms.

This pest invariably starts in the middle of the bush and near the ground. Have the hellebore on hand, and when the first worms are discovered spray the whole bush, as a delay of a single day may mean the loss of all of the leaves and consequently most of the fruit. An ordinary whisk broom answers all purposes in spraying currant bushes with hellebore.

California Horticulturally

THE WHITE FLY.

ALL question as to the identity of the aleyrodes discovered at Marysville has now been removed and it is decided to be, without doubt, the destructive and dangerous White fly (Aleyrodes citri) of Florida. So far it has not been found outside of the city limits of Marysville and as Yuba is not a citrus growing county, commercially considered, there is yet hope that its ravages may be confined to a very small area, if it cannot be entirely extirpated. In Marysville there are a number of orange trees growing in the dooryards, but these are grown more for ornament than for any profit attached to them. Very many of these are large trees and among them are some of the oldest trees in the State. These are all badly infested, as is also very much of the shrubbery and other trees in the city which will harbor the white fly and upon which it feeds. Certainly Marysville has a very bad case of Aleyrodes citri, and stands in threatening position today in relation to the great citrus industry of the State. So long as this pest exists so near the great orange sections of California so long are they in grave danger, although it has not yet reached them. Adjoining Yuba county on the west, is Butte County, the great orange producing county of Northern California and all along the foothills, through the entire Sacramento and San Joaquin valleys, are scattering orange groves, which would greatly facilitate the spread of this pest should it once break out of its present confines and attack the commercial orchards. Vigorous action has been taken by our State Horticultural Commissioner, Hon. Ellwood Cooper, who, as soon as it was determined that the white fly existed in Marysville, made a personal visit to the infested section and has ordered the total destruction of all trees and other forms of vegetation upon which it finds lodgment within the city limits of Marysville. This is drastic, but when it is considered that the citrus industry of California, in which there are so many millions invested and upon which so much of our prosperity depends, is threatened it will be understood that noth which may hold out a hope of exterminating this pest must be stopped at.

There are whole sections in Florida in which it is impossible to grow oranges on account of this pest, and in others the industry is threatened with extinction by it. That this is no imaginary danger is evident from the following extracts from a Florida paper, the Florida Agriculturist:

The control or extermination of the white fly is a matter of paramount importance to the orange interests of the State. Those groves which have escaped infection until now are not immune. If this pest is not checked it is only a matter of time, and a very short time at that, before every grove in the State will be infected with this enemy of the orange. Therefore every grower of citrus fruit in the State should unite in well-directed efforts to destroy this enemy.

And the same paper takes the following from the Monticello "News:"

The white fly is here, and apparently to stay. They injure orange trees and privet hedges, and often appear in such swarms as to cause choking and sneezing when they envelop a citizen. They find very little citrus foliage here to feed on, and have taken the Pride of India, or China berry trees, where they luxuriate. Kerosene emulsion, or Paris green sprayed on the foliage which they frequent, will reduce their numbers.

The great distance intervening between the section in which it has appeared and the orange sections of Southern California, give the latter an added assurance of safety, provided proper precautions are taken, but if it is to be kept out, the vigilance of the Horticultural Commissioners will have to be redoubled and their hands should be strengthened in the work of protection by the supervisors and the fruit growers of every clean county.

UNTIMELY RAINS.

A rain in June in California is both unusual and unfortunate. At this time our fruit is well advanced, hay is down and in many sections grain is ready for the harvest. Such is the condition in Northern California, and at this time we have had a very heavy downpour. Cherries, which are hanging ripe on the trees awaiting the pickers, have suffered severely, and a very large per centage of the crop of late cherries will be ruined. Grapes have been seriously injured, and very much hay in the field has been seriously damaged if not totally ruined. Cherries were the one fruit crop which has turned out well this season. The greater part of the early varieties had been shipped, but there was still a very large crop on the trees, which usually is dependent upon by the canners. These have been severely damaged. A rain at this season is phenomenal and there has not been such a downpour as the present recorded since 1884.

ANNIHILATING MOSQUITOES

Several places in the northern counties, especially Stockton and San Mateo, have commenced a war of extermination against mosquitoes by destroying their breeding places. This is done either by draining, where the pools are shallow, or by coating the surface with crude oil, where they cannot be drained. There is no question as to the mosquito being a prime factor in the spread of many diseases, especially yellow fever and malaria, and it has been found that by curtailing the insects, both these diseases can be checked. From the standpoint of comfort it is worth much to get rid of these pests, and as a matter of health and the welfare of the community it is worth much more.

SISKIYOU TO HAVE A HORTICULTURAL COMMISSION.

The necessity of looking after the interests of the fruit growers is appealing to most of the counties, and several which have never before thought it of sufficient importance to look after them are now appointing Boards of Horticulture. Away-off Siskiyou is the last to fall in line and the supervisors of that county have now under consideration the appointment of such a board. The fruit growers realizing the importance of their industry and the fact that it was exposed to all outside dangers have moved in the matter and with apparent success.

"You never saw my hands as dirty as yours," said a mother to her little girl.

"No, but my grandmother did," was the reply.

On the Canadian Pacific irrigated tract in Southern Alberta water is obtained from the Bow River, which draws its supply from the main range of the Rocky Moutains. As the season advances the snow melts higher and higher up in the Rockies, and thus a constant, unfailing supply of water is furnished to the Bow which fills the irrigation ditches during the spring and summer season—at the very time moisture is needed to mature the crops.

Owing to the inexhaustible supply of water coming from the mountains, it is unnecessary to build storage dams or reservoirs. The flow of water in the Bow River has been measured year after year by the Government, and it has been found just what the minimum flow is. The Government does not authorize the building of irrigation works to take more than the minimum flow from the river, so the settler is assured that in the very dryest season he will have all the water he cares to use.

Every farmer knows that plenty of moisture on good ground, with a good climate, means a bountiful harvest. On the irrigated lands of the Canadian Pacific in Southern Alberta you will always have plenty of moisture. and as the ground is rich and the climate is the best, crops must be good.

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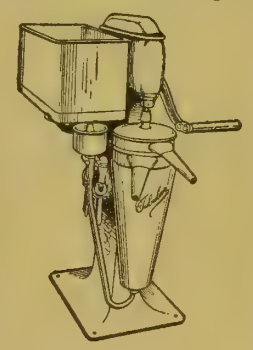

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CALIFORNIA DAIRYING.

Continued from Last Week

THE old time dairyman with ordinary cows built his herd up by selecting calves of his best cows to raise, and bartered for the head of the herd from a neighbor. The poorer cows were used for beef and the best survived to produce calves to replenish the herd. This is a slow way to build up a herd of milking cows. Some men wiser than the rest took certain selected cows and by using only ten or twelve head and crossing their offspring, discarding the weakly ones and introducing new blood, in time formed the breeds of the world.

Within the breeds there are great families that stand out preeminent, these have been created by using the superior animals for mating and keeping on until the sires could be trusted to improve any herd. The power of transmitting good is, even then, greater in some of the offspring than in others. This trait is called prepotency. Examine the records of cattle offered at sales and you will note the great sires by the number of times the calves are said to be of such and such strains. In the horse family we say it is Wilkes, Electioneer or McKinney stock meaning there is a chance that the great prepotency of these bloods from noted sires may show out in the present colts.

Prepotency.

The Jersey as a breed are prepotent even down to the color, many cows only remotely Jersey wear the colors. The Jersey cattle from the Island have been bred in one line for two hundred years. During this period no new blood has been introduced as there is a rigid quarantine law that does not allow any cattle to be brought into the Island alive. The type is firmly fixed therefore and cannot be changed except to the detriment of her breed.

Environment.

The natural home of the Jersey cows on the moist wind swept Island where snow rarely falls, makes her the ideal cow for the coast dairies. She also does well on the town lots as she only requires a limited amount of grazing and requires little exercise. Vegetable growing for the London market is the pursuit of the people of Jersey rather than cattle raising or dairying. The cows receive a liberal amount of the unusable portions of the vegetables for her feed. Cattle raising with these people is an art and only a few cows are kept by each family, they are carefully looked after by the women and children. The result is a perfect type of the family cow.

On the California coast the Jersey cow meets with her natural home conditions of feed, I fear she sometimes suffers from the care of the loving hands of womenkind and becomes nervous and wild when in the hands of the man milker. The soft changing color of the breed suggests the sand dunes of the ocean.

The Gurnsey, another Channel Island breed is of larger frame, heavier and of brighter color. The Guernsey is a giver of rich milk of a high color, the butter made rarely requiring artificial coloring matter. The Jersey and her grade are the most numerous of the Channel Island breeds in the United States. The Guernsey, like the Brown Swiss, have not as yet become a favorite with dairymen as until quite recently they have become scarce and high priced.

The Brown Swiss cattle are famous producers in their own country, hardy and good size. Those brought to the Biltmore estate were fine individuals and as yet have only adorned a tale of what not to do, as it is an excellent example of the folly of bringing cattle of a mixed type into surroundings unsuited and unnatural for them. Here, side by side with the more plastic Jersey, they have proved to be unable to accommodate themselves to the change at once. No doubt after a few years they will show up as a breed to great advantage.

The Ayrshire in California is at present scarce. Many families seem to have suffered from the dual purpose idea. I have seen cows that looked like Guernsey among them, so pure was the dairy type. Some of these may be seen at Santa Barbara. Others are like the spiked horn red and white grade shorthorns, distinctly steery in type. The Scottish breeders seem to prefer this style, I am told that the Ayrshire breed in America is a more dairy-like type than those bred in Scotland. Until this breed is more fixed in type it is well to examine both the sire and the dam of any cows purchased for uniformity of type gives greater success.

The Holstein-Friesian and the Jersey are the most popular dairy breeds in California, these nick kindly on the common stock of the State. They also adapt themselves readily to change of feed and climate. The Holstein particularly distinguishes herself in consuming to advantage large amounts of feeds of low nutritive values which she turns into a quantity of milk of a medium per cent of butter fat. The alfalfa fields are particularly suited to her likings. The Jersey is at home on the rye grass pastures of the coast. The Holstein and Jersey are well fixed in the type and scrub cattle when mated with them at once improve and take on their colors and dairy form.

The Holstein cow belongs by inheritance to the flat valley lands. She cannot climb like a Jersey, nor can she be induced to seek the highest point of hills like the Ayrshire. She is lazy by nature and only asks to be allowed to stand in the alfalfa field all day and eat and then lie down in a shady place and chew her cud when she rises it is only to move to a nearby spot to eat some more. What is on the other side of the fence does not interest her if there is enough to eat on this side. Feed, feed and plenty of it is her requisite.

Jerseys and Guernseys are fair hill climbers, but the Ayrshire stands at the head. They climb like goats up and up the steep grades that it seems hardly possible that a cow could go, yet they go with ease.

The common cows of California all show the Shorthorn strains. In many cases by selection they have become smaller and of a distinct dairy type. These are excellent milkers and profitable cows. They are also good as a foundation for grade herds as the improved blood is kindly on this sort of scrub cows.

Today many of the common cows are being fed generously as the high prices of butter make it profitable to hold the cows in milking as long as possible. The building of silos is also going on, a little more slowly at present than in the past as the high prices of lumber is deterring many from building at once, but the idea is well received and the need admitted. The less progressive men are still feeding on the natural grasses and allowing the cows to go dry with the seasons, only running the dairy during the time of year when the prices are lowest for butter fat. These cows often have to hunt a living by browsing on bushes and eating the dried grass. This affords them merely a maintenance so that even when the fresh grasses come the cows have to first put themselves into condition before they can produce a profit. This sort of dairying is going rapidly to the wall, for always to have plenty when no man wishes to buy and not to have any when the market is keen is a poor way to make a living.

On the coast ranges many of the hills remain green from the fog and here the more progressive men have planted rye grasses and corn to feed the cows. The silo has not been extensively used in the coast part of the country but it is coming more and more into use. It is the cheapest way to extend the fresh grass conditions all the year round. A full silo means no drop in the milk when the grass goes dry. The use of soiling crops has not been extensively practiced as yet.

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The development along these lines promises to be rapid. We know at present that vetches, peas and oats and wheat are all valuable for winter feeding while Indian corn and sorghums come in for summer use. That it is profitable no one has ever tried the use of them to go back to the old way, but advances one step farther to silo as a still cheaper way of doing the same thing.

DAIRY CLEANLINESS.

I have been handling cows for twenty-five years and during that time have made some interesting observations. As a result of my experience, I have come to the conclusion that the making of good dairy products, either butter or cheese, is based very largely on one principle, namely, that of cleanliness.

If dairy cows are healthy and if they are fed good grain and fodder, as they are usually fed on the farms of the Central West, the milk from one cow will make practically as good butter as the milk from another. To go further, the milk from one herd may be manufactured into just as high class products as the milk from another. Why then is there so much difference between the produce turned out from the different private dairies and indeed from the different creameries?

Unless one will make up his mind to be clean in every operation involved in dairying, he had better go out of the business because he can never hope to make high-class and therefore high-priced produce.

Not long ago, I was visiting a fellow dairyman and was present at milking time. One of the cows planted her muddy feet squarely in the milk pail, in my presence, and pulled it out again without knocking it over. To my surprise and disgust the milking of that cow was continued in the same pail and the milk was then added to the general supply.

Now, imagine what kind of a batch of cream one would have after collecting it three or four days where scenes like that are enacted daily. It is absolutely impossible to make good butter when milk is handled by any person or persons who are so coarse in their instincts as to shut their eyes to a filthy act of that kind.

To me there is no satisfaction in the business of dairying at all unless I know that every one who handles the milk, cream or butter, takes every precaution to keep the product clean. When this is done, you can tell something about what the ultimate product will be. Good milk means good cream and good cream means good butter. The cream will ripen uniformly and butter will come after churning about the same length of time each week.

It is my opinion that the sale of dairy products could be increased at least one-half in our small towns and cities if the public could be educated to think that producers were cleanly in their habits. I find no difficulty in getting a premium of five cents per pound for butter the year around from those who have confidence in my methods.—Iowa Homestead.

One Ukiah hop seller disposed of 100 bales at seven cents, which is one-half cent advance over previously quoted prices.

Cream Separators, all sizes, all prices. O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

COMMUNITY BREEDING.

Prof. W. A. Henry of Wisconsin, in a recent address, said:

"The next great advance will be community effort. The farmers in each community should meet at the schoolhouse and harmoniously agree upon one breed of dairy cattle for that community. If the most blood in the dairy herds now is Holstein, they should all agree upon Holsteins, and Holsteins only. If it is some other breed, then upon that breed. Where the farms are not large, instead of having one scrub bull on each farm, two, three, or even four neighbors should join and buy one or two registered bulls. The scrub bull has no place on hundred dollar land.

"Lake Mills, for instance, is a Holstein neighborhood. If every farmer within ten miles of Lake Mills will, from this time on, use nothing but registered Holstein bulls of high quality, the prosperity of this region will continue to advance. If he will use the Babcock test, and scales in addition, he will make still more money. It is urged that those farmers who are good breeders, and who already appreciate good blood in dairy cattle, embark cautiously but consistently in the breeding of pure-bred Holsteins. Half the farmers around Lake Mills should have no other than pure-bred Holsteins.

"Buyers always go where there are large quantities of goods for sale. No man likes to go a hundred miles with the bare hope of finding a cow or two at the end of his journey. The more he can see to select from, the more ready he is to part with his money. Already buyers come long distances to buy grade and pure-bred Holsteins at Lake Mills. If there were five times as many Holsteins there would be fifty times as many buyers. All honor to the breeders of Holsteins about Lake Mills! The early breeders deserve a vote of thanks from the farmers. Every farmer about Lake Mills has felt the benefit of these pioneers. The best way to show appreciation is to embark in the same enterprise and get some of the money that buyers are willing to pay out for good Holsteins. There is no danger of an over-supply of good Holstein cows, pure-breds or grades. If the market is going to be overrun, then the breeder of scrub cattle will suffer the most. If it is going to be hard to sell pure-breds and high-breds, it will be impossible to get any profit out of the scrubs."—H.—F. Register.

A householder at Corona was fined $7.00 for mutilating a fine large pepper tree in the way of his house-moving operations. The Corona judge must have a low ideal of the worth of pepper trees.

Santa Ana farmers are becoming interested in the growth of broom corn. The Bulletin says that one property owner offers seed and free use of land to those who will raise it one year.

The Santa Ana Register reports that after the ravages of the army worm were over the celery seed beds came out in fine shape, and the prospects of fine crops in large quantity is now good.

The Exeter Sun says that sweeter strawberries than Exeter's are unknown.

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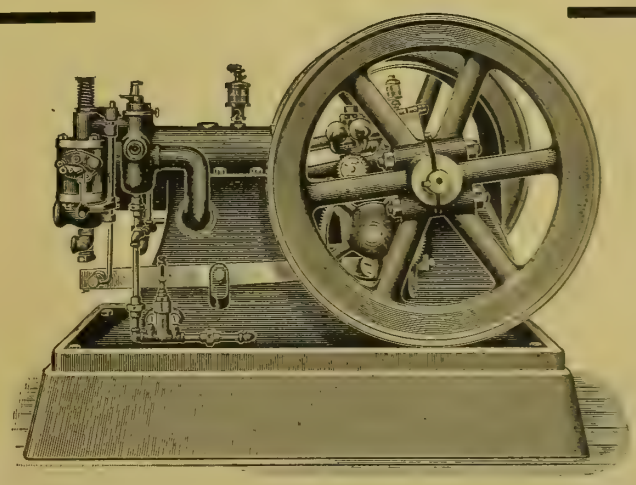

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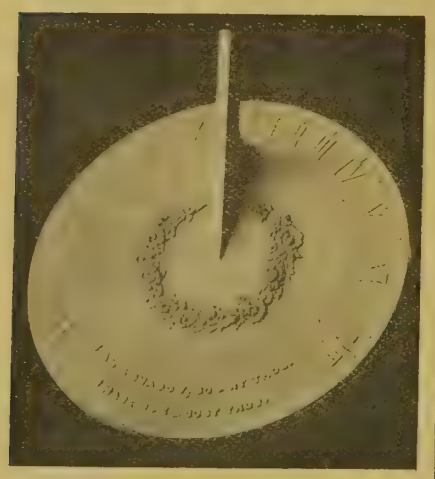

In laying out your grounds to beautify your home, have you reserved a place for a Sun Dial? If you have not, than spend a few moments in your grounds and see how incomplete they are without a beautiful Sun Dial, with jasmine, ivy or smilax twined around its pedestal. I make these Dials of Bronze to your order, any size and inscription to suit you. Deliver them set up and guarantee correct time. No grounds complete without one. Write for prices with or without pedestal.

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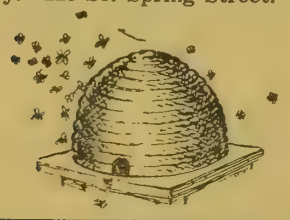

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The Ornamental Garden

INTELLIGENCE IN FLOWERS.

MAURICE MAETERLINCK, philosopher, describes from a poetic point of view, the apparatus to be found in some kinds of flowers to prevent self-preservation and to secure pollen for the stigma from neighboring plants. The subject has been elaborately dealt with by Darwin from the point of view of the naturalist. In Harper's Magazine for February. Maeterlinck takes, among others, the common sage, a herb of which there are several species, to illustrate what he has to say about "The Intelligence of the Flowers." The important parts concerned in fertilization are the stamens, topped by anthers filled with pollen dust, and the pistil (topped by a stigma,) at the base of which the seeds are formed after the pollen grains have found their way thither. It has been noted that all showy flowers depend on insects for fertilization. Bright-colored petals blazon the fact that nectar within the flower awaits the visiting insect.

In the case of the sage, as Maeterlinck points out, the stigma is contained in the upper lip, which forms a sort of hood, in which are also the two stamens. To prevent these stamens fertilizing the stigma it is twice as tall as they so that they have no hope of reaching it. Moreover, in order to avoid any accident, the flower has made itself proterandrous, that is to say, the stamens ripen before the pistil, so that, when the pistil is fit to receive pollen the anthers of the stamens have already disappeared. It is necessary, therefore, that an external force should intervene to accomplish the union by bringing foreign pollen to the abandoned stigma. A certain number of flowers, the anemophilous flowers, leave this care to the wind. But the sage is entomophilous, that is to say, it loves insects, and relies upon their collaboration alone.

The insect depended on by the sage is the bee. "Observe the wonderful trap contrived by the sage—at the bottom of its tent of purple silk it distills a few drops of nectar; this is the bait. But, barring the access to the sugary field stand two parellel stalks, somewhat similar to the beams of a Dutch drawbridge. Right at the top of each stalk is a great sack, the anther, overflowing with pollen; at the bottom two smaller sacks serve as a counterpoise. When the bee enters the flower in order to reach the nectar she has to push the small sacks with her head. The two stalks, which turn on an axis, at once topple over, and the upper anthers descend and touch the sides of the insect, which they cover with fertilizing dust. No sooner has the bee departed than the springy pivots fly back and replace the mechanism in its first position; and all is ready to repeat the work at the next visit.

"This is only the first half of the play; the sequel is enacted in another scene. In a neighboring flower, whose stamens have just withered, there enters upon the stage the pistil that awaits the pollen. It issues slowly from the hood, lengthens out, stoops, curves down, becomes forked so as, in its turn, to bar the entrance to the tent. On its way to the nectar the head of the bee passes freely under the hanging fork, which, however, grazes her back and sides exactly at the spots touched by the stamens. The two-cleft stigma greedily absorbs the silvery dust, and the impregnation is accomplished. For the rest, it is easy, by introducing a straw or the end of a match; to set the apparatus going and to take stock of the striking and marvelous combination and precision of all its movements.

VARIATION IN PLANTS.

Plants differ one from another. No two plants are exactly alike. No two trees in the same orchard are alike. No two trees produce precisely the same grade of fruit, although they are the same variety. Life is a perpetual struggle either for man, beast, plant or tree. The strongest survive while the weak perish.

Yucca Whipplei
An addition to the foothill landscape all over Southern California at this season

The wide variation of plants and trees even of the same species is the struggle on the part of the individual to adapt itself to its surroundings. As no two plants or trees are alike it is not surprising that a wide variation is at times discovered which amounts to a new variety. An abundant or deficient supply of food may have helped to cause this variation. Climate may also have had its effect in causing the change in the variety. If located in the north the tendency is that it may become harder, and if located in the south its tendency is to become more tender.

Stock breeders have learned tha in order to keep a herd in the best possible condition, they must frequently introduce new blood. In stock breeding the results are definite and precise, but in plant breeding less certainty is possible.

To fully understand the art of crossing it is necessary to study carefully the botanical structure of the flower; select an unopened bud, open it and cut away the stamens before they discharge their pollen. Then cover the pistils with a paper sack and allow them to ripen or become receptive, that is ready to receive the pollen. This is evident by the swollen appearance of the stigma which also becomes covered with a mucilaginous substance. This will take from one to three days, depending on the weather. As soon as the stigma has become receptive, the pollen is collected from the variety it is desired to cross, and is applied to the stigma with a fine brush, great care being taken to prevent any other pollen from lodging on the pistils than that which is designed to use. To guard against this the pistils are carefully covered, from time to time the bud is opened and the stamens removed, until it has received its pollen from the variety it is desired to cross and until this pollen has entered the ovary fertilizing the ovules which swell and the fruit is set.

The subject of variation in plants is so large that it is impossible to give fully all the underlying principles in so short an article.—Exchange.

EVOLUTION.

Dedicated to Luther Burbank.

I was once a peach, just a common peach,
Burbank found me one day within his reach
And plucked me down, and looked me o'er,
And now you see I am a peach no more.
What am I? That's what I'd like to know
As I sit in this agricultural show.
I'm not a peach nor yet a plum nor 'cot
I sometimes think I'm just a common sot
Drunken with the wine of my own juice.
I give it up; there seems to be no use,
I'm what I am, not what I was before,
And yet I'm what I was and something more.
If you can solve the riddle let me know
And on your head my gratitude I'll bestow.

—G. P. Sullivan, La Crescenta.

Johnny's Luck.

Little Johnny saved his pennies,
Saved them for six months or so,
Saved to purchase cannon crackers—
Johnny's spirits now are low.
Someone stole his bank, his pennies,
Took his savings all away:
Don't cry, Johnny, you may, therefore,
Live to save, another day.

She (gushingly)—Don't you love all the fresh, green, young things?
He (judiciously)—Yes, if they ain't human.—Baltimore American.

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ROSES

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The Vegetable Garden

LETTUCE FOR HOT WEATHER.

NO ONE should be satisfied with growing lettuce from early sowings. This appreciated salad vegetable should be sown at intervals of two weeks or so through the entire season, so that it may be cut when at its best. The most satisfactory kind for the hot summer weather is the crisp, heading type, and if planted in rich, loose soil and with frequent workings to keep the earth loose and mellow, and plenty of water is given it will make rapid growth and be sweet and tender. Good heads of cabbage, or butter, type may be had by a selection of the best varieties, and we would suggest the May King for a medium-sized early head, and the All New Seasons for a large, well-folded head to withstand the summer sun.

The crisp head type grows to a larger size, stands the heat well and heads quite firmly under good cultivation. It has thinner, crisper leaves than the cabbage type, blanching to a paper white instead of golden yellow. Of this type the Iceberg and Giant Glacier are the best varieties. New York or Wonderful grows to a much larger size, but the outer leaves are of a very dark green tint and less pleasing in flavor than the two preceding varieties. Any of these can be grown to please the most fastidious taste by giving shade during the hot, sunny portions of the day, and if tied up loosely the hearts and inner leaves are beautifully white. Many prefer the bunch, or cutting lettuce to the heading varieties as being more readily grown and as being available for use at any stage of growth. For June plantings of this type, the Black-seeded Simpson and the Morse are both good sorts with a large amount of leaves of a light golden tint, of handsome appearance and excellent flavor.

The cos, celery, or romaine type of lettuce may be had during the hot months with good cultivation, and is esteemed for its mild flavor and refreshing crispness. The best garden type is the Dwarf White Heart and its smaller, earlier prototype, the express cos. These do not need tying to blanch the inner leaves, as they fold over closely at the top.

The secret of summer lettuce is to make frequent plantings of small quantities of seed, and to keep the ground well stirred close up under the leaves every two or three days and supply moisture as the plants will soon run to seed if the soil is not well watered and cultivated.—Coleman's Rural World.

A SUCCESSION OF VEGETABLES.

There is scarcely anything that means so much enjoyment for the dwellers in country homes as a good garden, and to have this we must do more than simply make one planting in early spring says E. H. Riehl in Coleman's Rural World. It is a good plan to procure early in the season a goodly supply of the different seeds, especially such as may be planted at intervals, so as to have vegetables fresh and tender all the season through. Peas we cannot in this climate have after the hot, dry summer days come upon us, but by planting a number of varieties at different times in the spring we may have them much later than most people do. Sweet corn is one of our nicest vegetables and one that may be had from early summer until after frost under proper management. String beans are another important crop that will grow and do well no matter at what season they are planted after the ground is warm in spring. But they must be planted in time to mature before frost. Many people err in making but one planting of melons, for though watermelons and muskmelons should be planted for a succession the late crop is generally appreciated as much as the early one. Several plantings should be made of cucumbers also.

COST OF HAULING CROPS.

The information contained in Bullein 49 of U. S. Dept. Agriculture was secured from correspondents in 1894 counties in different States. The statistics deal particularly with 23 of the staple agricultural products grown in the United States and embrace the number of counties reporting, average miles to shipping, weight per load, cost per ton per mile, etc.

In a summary of these data the author of the bulletin says: "The average costs per 100 lbs. for hauling products from farms to shipping points vary in number of instances roughly with the relative values of the articles hauled, the more valuable product being hauled often at greater cost than the less valuable product. Corn, wheat, oats, hay and potatoes were hauled at costs ranging from 7 to 9 cts. per 100 lbs., cotton 16 cts. and wool 44 cts. per 100 lbs. Tobacco and hogs, however, cost only 10 cts. per 100 lbs. to be hauled from farms. The difference in cost of hauling between one product and another is largely due to the relative distance traversed and the relative size of load taken."

Statistics are also presented and discussed regarding the farmers' longest hauls and methods of hauling, with the effect of these factors on local and general prices. The quantity of farm produce hauled in 1905-6 is estimated at more than 49,000,000 tons and the cost of hauling at about $84,684,000 for the most important crops mentioned. The value of better roads, quicker methods of loading and unloading, and other factors are also discussed in their bearings on the reduction in the cost of hauling.

CHEAP HOME-MADE PAINTS.

Those who do not feel justified in using first-class paint on the cheaper sheds and outbuildings may find some of the cheap home-made paints satisfactory. Many farmers use mineral paints of various kinds. There are several kinds of paints in use in other countries where the conditions are more trying even than in America and which have the approval of their agricultural departments.

One is from the agricultural department of the Transvaal Colony in South Africa, as follows:

"Stir into one gallon of milk about three pounds Portland cement and add sufficient Venetian red powder or any other paint powder to impart a good color. The milk will hold the paint in suspension, but the cement, being very heavy, will sink to the bottom, so that it becomes necessary to keep the mixture well stirred with a paddle. This feature of the need of stirring is the only drawback on the paint, and as its efficiency depends upon administering a good coating of cement, it is not safe to leave its application to untrustworthy help. Six hours after painting this paint will be as immovable and unaffected by water as month-old oil paint. The party giving this recipe claims that he has heard of buildings twenty years old painted in this manner in which the wood was well preserved. The effect of such a coating seems to be to petrify the surface of the wood. Whole milk is better than buttermilk or skim milk as it contains more oil, and this is the constituent which sets the cement. If mixed with water instead of milk the wash rubs and soaks off readily. This cement-milk paint brushes on smoothly and easily—almost equal to genuine oil paint—is cheap and easily made."

The agricultural department of Queensland, Australia, has published several recipes for whitewash, viz.:

No. 1. Twenty pounds of lime (unslaked,) three pounds common salt, one-half pound alum. Slake the lime with boiling water until the consistency of the wash is similar to thin cream. To increase its antiseptic properties add one-halp a pint of crude carbolic to each bucketful of wash.

No. 2. To one-half a bucket of lime add two handfuls of common salt and two handfuls of tallow, or, better still, soft soap, at the rate of two pounds to thirty gallons of wash. Slake slowly, stirring all the time. This quantity will make two bucketfuls of wash which possesses the properties of being very adhesive and unaffected by rain.

No. 3. Slake lime with water and add sufficient skim milk to bring to the thickness of thin cream. To each gallon add one ounce of salt and two ounces brown sugar dissolved in water.

The germicidal values of Nos. 2 and 3 can be increased by the addition of one-fourth pound of chloride of lime to every thirty gallons of wash. Before applying the wash to wooden, metal, or stone structure, precautions should be adopted to clean the surface of foreign matter, thereby increasing the benefits of the solution. Care should also be taken to bring all crevices under the influences of the antiseptic.

Y. M. C. A. AGRICULTURAL CLUBS.

The educational department of the international committee of Young Men's Christian Associations has entered upon a campaign to encourage the associations in different parts of the country to start boys' agricultural clubs, and boys' gardens as means of employing profitably the time of the younger members when pleasant weather out of doors attracts them away from the association rooms. A leaflet has been published giving suggestions for organizing the clubs and conducting the gardens.

The Southern Pacific has issued a neat booklet with illustrations of San Francisco hotels, to show that the city is now prepared to entertain her guests nearly as well as ever.

A Cultivator field worker, looking over the Laguna and Empire ranches in the San Joaquin valley, reports fine crops of hay and grain, with the harvester in full swing.

Grain crops along the west side of the San Joaquin valley are reported in excellent condition. Late sown grain will not be as heavy as anticipated however.

Tomato Plants Cheap

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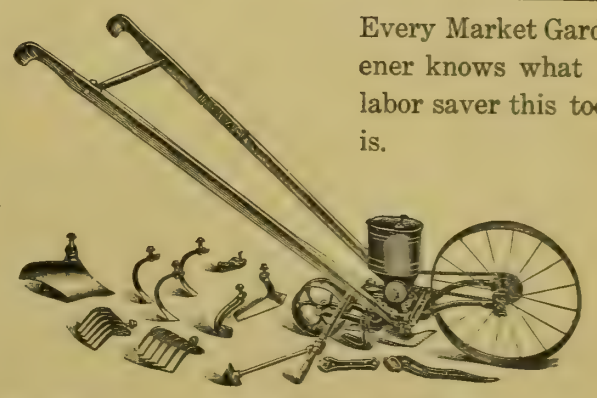
San Jose, Cal.

A Wheel Hoe



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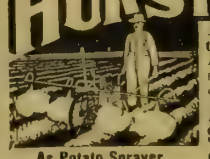

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With the Citrus Growers

INSPECT ALL STOCK.

THE fact that we are in constant danger of having new orchard pests introduced makes it imperative that no plants of any description should be allowed to come into California (or the United States) from any foreign country where it is known that serious pests exist, except that they pass through a legally designated quarantine station that must be in charge of a competent man that has made the subject a study, not only in the laboratory but in the field. This latter qualification is a very necessary one, as it opens up to a man the numerous sidelights that do not develop in the laboratory.

The fact that fruit is being constantly imported into this country is a source of danger. In our last issue we referred to the fruit fly which infests apples and other kinds of fruit in Australia. It is a pest that not only renders the fruit worthless but repulsive. This last feature is a serious menace from the fact that it furnishes an incentive for those ignorant in things horticultural, to scatter the pest. Suppose for instance a box of apples imported from Australia, in which were a few apples infested with the maggots of the fruit fly, first from the box being sold on the street in San Francisco, to travelers going to take the train for Monterey. Suppose about this time the train reached Pajaro the traveler took a bite into the apple and opened up a mass of nasty worms. He would not put it in his grip or pocket, but out the window it would go. That would be a starter that would infest that section. Should the same thing happen on a Los Angeles train for Riverside, the orange growers would receive a solar plexus blow. It is all important that such chances be guarded against. Such pest are worse than anything now in existence in this country. We now have active men attending to this work, but they are powerless unless the transportation companies co-operate with them and when plants and fruit are transported through the mails, these chances of introducing these things becomes very great.

TRIFOLIATA STOCK.

Some years ago this new stock was introduced into Calfornia horticulture made easy by flattering reports from the South Atlantic coast. It was claimed that trees budded on it were much hardier than when budded on other stock and the trifoliata being of a deciduous nature; gave a slower flow of sap during the fall and winter months. It is claimed that this hardens the wood and is not so susceptible to freezes. This may be so in some cases, but it is not so in all. We had occasion to note the effect of frost on trees budded on trifoliata, sour stock, pomelo and sweet stock in the Pomona Valley. The trees were all planted the same season, side by side. The sour and trifoliata stocks were one year old and the others two years old when planted. At the end of the third year in the orchard the trees on pomelo and sweet stock were fully three times the size of those on sour and trifolata roots. After a heavy frost that curled the leaves on all orange trees in the district, there was no perceptible difference in the appearance of the trees except that the smaller trees seemed to be frosted the worst and had we not known what the different sets of trees were budded on, we would have decided at once that the difference in size was the only reason why the smaller ones were the worst frost bitten. We have no proof that such was not the case and therefore we allowed our decision to rest at that. When the trees are older a test of cold weather that is cold to the discomfort of the orange grower, it will be time enough to render a decision.

One thing is certain, and that is the size of the crop on the larger trees was much larger the third year than was the crop on the smaller trees—those on trifoliata and sour stock—when they were the same age. It will take more than two or three seasons to settle these questions and when they are settled to the satisfaction of the growers, one problem will be put behind them for all time.

There are two sets of experiments along this line being worked out at the Riverside Citrus Experiment Station; one taking in stiff, heavy clay running into hardpan and from there on to warm loam soil. Another set is growing on a decomposed granite soil that is typical of some of the best orange land in Southern California. There are Washington Navel and Valencia oranges and Eureka lemons included in these tests.

POWELL'S REPORT.

Continued from First Page

the unsound fruit to a greater or less extent and pre-cooling retards it still more, as the fruit is cooled more quickly than in an iced car. On arriving in the market the decay starts quickly in the fruit that is mechanically injured or is otherwise weakened, if the weather is warm, but the icing or the pre-cooling method does not appear to cause sound fruit to decay quickly when withdrawn from the car.

Refrigeration is No Guarantee Against Decay From Rough Handling.

The refrigeration-car service has made it possible to develop the citrus fruit business to its present proportions and to extend the trade to the most distant domestic and foreign markets. A refrigerator service, however, should not be looked upon as a means of overcoming the abuses to which the fruit may be subjected in the groves and packing-houses, but rather as an assurance against excessive loss after grower and the packer have performed their duties in preparing the fruit for proper shipment. To handle the fruit roughly in the groves and packing-houses, and then to depend on a refrigerator car service to land the fruit apparently sound in market is simply transferring the decay to the receiver. Carefully handled fruit is a valuable asset for the fruit shipper and an asset that the receiver and the consumer have a right to expect.

General Summary of Results.

There are a few fundamental factors that appear to govern the successful shipment of the orange. The groves should be kept free from scale and in good condition, in order to avoid the necessity of washing the fruit; the picking, the hauling and the packing-house operations should be of such a character as to preserve

the natural immunity of the orange rather than to make it susceptible to rot by rough mechanical handling. It is equally important to ship the fruit quickly after picking and packing at the lowest practical temperature. There has been an improvement in the methods of handling the orange in the last few years, but the amount of injury that occurs in handling the fruit in many groves and packing-houses is still excessive. Citrus fruits are probably handled better than any other large fruit crop in the United States. No other fruit crop is handled with such a degree of skill and economy, but at the same time it should be recognized that it is false economy to reduce the cost of the various handling operations to a point that makes a proper handling of the fruit impossible. To overcome the losses from decay in transit is a business matter related to the methods of organizing the citrus fruit business, to the systems of labor hiring, the methods of picking and hauling the fruit, the system of packing-house management, and the methods and efficiency of transportation. A system of organization, of labor handling or of packing-house management that makes the quantity rather than the quality and uniformity of the work the leading consideration is detrimental to the shipping quality of the fruit. It has been the aim of the Bureau of Plant Industry to point out the relation of the methods of citrus fruit handling to the losses that occur in transit and to suggest methods that help to preserve their splendid natural keeping qualities.

THE WHITE FLY.

Continued from First Cover Page

judging by its distribution and abundance at Marysville, but no observations have been made on its life history and habits except during the last few weeks since its discovery in the State. There is but little doubt, however, that it will prove to be much the same as in Florida. The most elaborate study of this insect is that reported in Bulletin 67 of the Florida Experiment Station by Professor H. A. Gossard. In the following account of the insect much will be taken from this publication:

The Egg.

At the present time the insect is chiefly in the egg stage. Nearly every leaf on the trees in this town were similiarly infested. These eggs are so small as to be scarcely visible to the eye singly, but the badly infested leaves appeared as though covered with mold. While rather less than half the town of Marysville is badly infested, still a careful examination would show the presence of a few eggs on nearly every tree.

It is not easy to distinguish between the eggs of the different species of white flies. According to Gossard, the egg requires from three to twenty days to hatch, according to the weather.

The Nymph.

The young insect on hatching very much resembles a young scale insect. Like the scale insects, the young white fly wanders over the twigs and leaves for a few hours, finally attaching itself by inserting its mouth-parts into the leaf. After thus locating itself the young insect soon secretes a wax in sufficient quantity to fill the space between the body and the leaf. Because of the small size and transparency of the body and this cementing of the body to the leaf the insect is almost invisible. In structure and habits the nymph is so like scale insects that if seen at all they could easily pass as young scales.

The full grown nymphs have a very much thicker skin than the younger stages and this remains attached to the leaf after the molt. On some tress at Marysville most of the old leaves are well spotted over on the under side of these exuviae.

The Adult Insect.

The name white fly was given to the insects of this class on account of the appearance of the adult insect. Its snowy white color makes the insect very conspicuous, notwithstanding its extremely small size. In the spring they appear in great numbers for two or three weeks and then suddenly disappear after laying their eggs, only a very few belated individuals coming out after the others. In mid-summer a second brood begins to appear. There is no distinct swarm as in the spring, but during the whole latter half of the year the adult white fly can be seen on the trees in greater or less abundance. After the colder weather of winter begins the adults almost entirely disappear and are not seen again until the spring emergence. The life of any individual fly is very brief, averaging, according to Gossard, between four days and a week. During this time the eggs are laid, and as many as seventy-five have been deposited by a single female.

The Detection of the White Fly.

At the present time the discovery of the presence of the white fly is of very great importance. After the insect has become so numerous that it is conspicuous either by its injuries or the swarms of the adult it is doubtful if eradication is possible, at least without very radical measures being employed. Much misapprehension can be avoided by getting a correct idea of the insect and of the things it is liable to be confounded with.

First it should be understood that the white fly is very minute. There is no other insect pest on citrus trees as small as the white fly, unless it be individuals of the red or yellow scale.

An insect much more likely to be confused with the white fly is the soft brown scale. This is a much larger insect than either the red scale or the white fly. One can very easily mistake, however, a very young soft brown scale for a partly or full grown nymph of the white fly. The soft brown scale is rarely as transparent as a white fly of the same size and is therefore much more easily seen.

There are many kinds of spots to be found on orange leaves which will be viewed with suspicion, all of which can be readily distinguished by the use of a good hand lens. The white fly exists on the tree only in four forms: the egg, the nymph, the old finally discarded skin of the full grown nymph called the exuvium, and the active flying stage of the adult insect. Any other kind of spot or structure on the leaf is certainly something else than the white fly.

Food Plants.

The white fly seems to prefer the leaves of orange and lemon, but will come to maturity on a variety of plants. This generally complicates the problem of their eradication or control. The following is a list of the plants upon which the insect breeds in Florida as recorded by Gossard: Citrus, all species; china berry tree, cape jessamine, Japan persimmon, California privet, golden privet, mock orange, Ficus, various species; water oak, prickly ash.

Character of Injury.

The injury done by the white fly is of exactly the same character as that done by scale insects, with the exception that being confined to the leaves there is no direct damage to the twigs and larger branches that makes the work of the San Jose scale, for instance, so fatal to the tree it attacks. Its direct effect on the foliage is similiar to that of the red or purple scale and its indirect effect like that of the black scale. Doubtless this latter will be considered the more serious since the excretions of this insect seem to cause the smut to cling with so much tenacity that it is practically impossible to remove it.

Methods of Control.

We have of course no experience in California in the control of this insect. The best Florida practice as recommended by Professor Gossard is as follows:

December—Spray with resin soap.
January—Spray with resin soap.
February—Spray again as above if necessary.
June—Spray with potash whale oil soap.
July—Spray with potash soap and sulfur.
August—Spray with potash soap and sulfur.
September—Spray with potash soap and sulfur.

Such a programme of spraying would seem rather hard to carry out to our growers, and possibly we might find that two or three fumigations a year would be as effective as the larger number of sprayings, or perhaps one fumigation followed by several summer sprayings. Our trees are mostly low and small compared with the Florida groves, so that fumigation is possibe as it would not be in that State.

None of the scale insects can fly, and therefore distribute themselves very slowly; but with the white fly in a community a clean orchard may become badly infested in a day, making summer treatment necessary no matter how thorough the winter work has been.

The Present Problem in California.

As far as is known the white fly

Concluded on Page 651

Oranges and Lemons

When the right varieties are properly grown and planted, are money makers. Our new booklet on Citrus Culture tells all about the standard sorts, planting, cultivation, irrigation and packing the crop. Over 100 illustrations and something like 50,000 words of text. The price is merely nominal, namely, 25 cents. May we have your name for a copy?

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THE WEED CUTTING LAW.

The Citrograph recently said: "In our opinion the bill passed at the recent session of the legislature of this state, providing that cities may clean vacant lots of weeds and that the expense of the work may become a lien upon the property for which it may be sold, will prove the unmixed blessing that its advocataes proclaimed. There are two sides to every question of this sort and enthusiasts for petty reform are not accustomed to looking at both sides. Clean streets and sidewalks in any city are surely most desirable, yet it is possiole to have them cost too much and, in this case, the effort to secure them may retard the growth of a city."

On the contrary we believe the law, had it been signed by the Governor, would have proven to be eminently satisfactory except to owners of vacant lots who do not desire to improve them. There are in every town owners of realty who buy lots on speculation. Many of these owners are non-residents who leave their property uncared for. Year after year, permitting weeds to grow thereon, never cultivating them. They be- birds to improved places and lawns and garcome a nuisance. Seeds are blown and carried by dens are made foul with them, costing the owners of these improved properties many dollars annually to get rid of them.

Why should non-resident owners of vacant lots be permitted to do this? Why should resident owners be allowed to leave their vacant lots in weeds to destroy the tidy appearance of the streets? Weeds are the evidence of shiftlessness. They mar the beauty of a town and they cause endless trouble to people along side of them who desire to keep clean grounds. The owners of these lots buy them for profit, and if they keep them clean they will find that the cost will be amply made up in the enhanced price they recive when they come to sell them.

The subject of noxious weed control was introduced into the County Horticultural Commission's law by the legislature of 1905 in an amendment placing the control of troublesome weeds upon the same basis as the control of insect pests. It is now lawful for the Horticultural Commission of a county to issue notice to property owners requiring the eradication of noxious weeds. If the notice is not respected the work may be done at the county's expense and made a lien upon the property and collected as a fumigation bill is collected. Just what constitutes a noxious weed might be an undetermined question in case of a contest, but the law if enforced would be of great assistance in cleaning up the weed nuisance.

TRADE CONDITIONS.

Both Dun and Bradstreet report a very satisfactory outlook for California products. Dun says this will be a most prosperous summer. Grain crops are in every way satisfactory with unusually large yield. Summer crops have matured finely with better yield than expected. owing to the wet spring. The bean crop will be as large as that of last year in most sections of the State. The beet crop will also make a fairly good return. The fruit grower is in luck this season. While the apricot yield will be light, peach, plum, berry and grape crops will be more than normal. Prospects are good for a heavy walnut crop this year, and olives are also heavy. More than 3500 tons are anticipated, and the best grade it is expected will bring $70 per ton. The winter vegetables have been very satisfactory. Over 6000 tons of cabbage have been shipped, realizing in the neighborhood of $122,000 to the grower. The cantaloupe crop also presents a very flattering outlook, 1100 carloads are expected to be shipped. The honey crop will also be a full crop and the price will be strong for the demand is good. Canned goods will reach the record-breaking price this season owing to failure in several Eastern States caused by bad weather conditions. California canned goods will sell for the highest figure in recent years. There is not a heavy demand for cured fruits, but still the outlook is quite satisfactory. The navel orange season is practically over, and it has been one of the most satisfactory so far in recent years. The call for Valencias is very earnest, and it is expected will be successfully settled, consequently the price will be strong. Lemons will improve from now on for the season is just opening when they will be in greatest demand. Taken as a whole, the Northern California grain and deciduous fruit producer and the Southern California orange grower will have every reason to remember the season of 1907 as among the best in his experience.

NOTICE TO CLEAN UP.

Horticultural Commissioner Cooper, has sent notice to all county commissioners to be watchful, and vigilant in the watch, for the White fly. From the notice we quote:

Notice is hereby given to the various County Boards of Horticulture that they take all necessary measures to prevent the spread of this pest, and, also, that they take all necessary means to eradicate it in those districts in which it has appeared, and to prevent its introduction in those counties where it does not exist.

There is as yet no known remedy for this pest which can safely be relied upon in the form of spray or fumigation, and

It is therefore ordered, That all infested trees, plants, or other forms of vegetation upon which the said Aleyrodes citri feeds shall be immediately destroyed, by the removal and burning of all portions liable to infestation. In the case of trees, the whole foliage-bearing surface must be removed, leaving only the bare trunks, and these trunks must be treated with a thorough coating of whitewash, composed of quicklime slaked with water.

It is recommended that the stubs of such trees, from which the limbs have been removed, be protected with an application of grafting wax or of paint to prevent the entrance of air and to save the tree for the growth of the new top. In the case of smaller shrubs and plants the total destruction of their tops at the ground will be necessary.

With the notice is also a special notice to the commissioners of Yuba County to thoroughly clean up the city of Marysville, before July 8.

This is drastic but necessary to the welfare of the State.

BE CAREFUL AND CONSIDERATE.

The Cultivator is growing so fast every way, that it is impossible to avoid mistakes. We aim to do this as far as we can but we do not always succeed. With TWELVE THOUSAND and over different names on our subscription lists and a large amount of daily mail to handle errors will be made. Certain things help mix our correspondence and contributions. Some folks fail to sign their name; others fail to put postoffice on the letter or article submitted; some write so we can't read the name or postoffice. The result is evident. If you fail to get reply to a letter or fail to get credit for a contribution don't blame us until you are sure that we had the above points to work from.

Our mail goes through many hands. If a letter contains a subscription, a query, a veterinary question, and a contribution or two and you sign your name and address to but one there is apt to be a mix up. Each part of the letter goes to a different department. No one reads the part belonging to another department and would not notice that address was missing. Once it has gotten separated there is no hope of finding the address.

We have made mistakes through the carelessness of printers and others that misplace names in type, and no one is the wiser until some one complains. We have many people working and it is not to be wondered at that some mistakes get in the paper and in the subscription lists.

If any one has discovered a mistake of name or address, or we have failed to give credit we would be pleased to get knowledge of the fact. It is'nt necessary to write an abusive letter for we are not in the habit of making mistakes purposely.

END IN SIGHT.

The Jamestown exposition is reported to be a financial frost. This leads to the expression of pubic sentiment which has been crystallized for some time that these hurrah expositions have about run their course. The Philadelphia fair, the Chicago exposition, the Omaha show, the Portland exposition were all difficult propositions to finance and in the end were profitless, so far as results went—except to the railroads which hauled the people back and forth. These expositions do not avail the country anything of value. Each one costs the government from one to ten million dollars and the treasuries of contributing states as much more. The system has taken on the form of an endless chain and a good deal of boodle and favoritism is passed around Congress every time one of these fool expositions is proposed. The fad has worn off and people are satiated, but after all it would seem too bad to cut the poor railroads out of such a big slice of their passenger traffic. The same money expended in legitimate endeavor to advance the agricultural and industrial conditions of the states in which these expositions are promoted, would result in vastly greater beneficial results to the country.

CHANGE IN OWNERSHIP.

Henry Kruckeberg has acquired the Rural Californian from Mrs. C. M. Heintz and the June number is a masterpiece in typographical beauty. The contents of the magazine is excellent as well. Mr. Kruckeberg formerly was connected with the Rural Californian. He comes back to his first love with enthusiasm and a laudable ambition to rank all monthly publications of like character in California. We trust he may realize his endeavor.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

San Fernando has a rural postal delivery.

Tomatoes are being shipped in carload lots from the Coachella valley.

A big plantation of Eucalyptus trees is being made in the Yucaipe valley.

The acreage of alfalfa is much larger this year than heretofore at Hemet.

The Farmers' Club at Mound held an interesting picnic last week at Casitas.

There are forty-five miles of distributing flume line, without the main line, on the Hemet Tract.

A stallion said to be worth $1000 belonging to a Huntington Beach farmer died of lockjaw last week.

The United States government Land Office in Los Angeles is being crowded with business as never before.

The Riverside county supervisors are to build a dipping vat in districts where Texas fever prevails.

The Auburndale Development Company at Corona has just completed the installing of a fine new pumping plant.

A veterinarian of Riverside county had his salary lowered by the county supervisors, from $100 to $50 per month.

The Laguna dam in the Colorado river above Yuma came near being washed out during the recent high water.

San Jacinto reports alfalfa fields in most flourishing condition with promises of $8.00 to $10.00 per ton for the output.

Riverside advertises several tons of straw at $1.00 per ton. San Francisco advertises straw at 70 to 90 cents per bale.

An alleged grafter by the name of Watkins has been called to book for a big land scheme in the neighborhood of Rialto.

The dairy business is on the increase at Hemet, and a large quantity of cream is shipped daily to Arlington and other points.

Onion growers of the Thermal Union are receiving two cents per pound for onions shipped from the Union, the total output aggregates over 35 cars.

Limas are now quoted at 5 cents per pound in Ventura county bean fields which makes the bean growers look sorrowful because they have none to sell.

Hay buyers are numerous amongst the ranchers back of Redlands. One trouble has been to secure sufficient hay balers to properly care for the large output.

Engineer Grumsky of the Interior Department is in Imperial valley looking for a satisfactory solution of the problem of the permanent control of the Colorado river.

The Pioneer Truck Company of Los Angeles owns a ranch near Chino where it pastures its stock and grows most of its supplies. There are over 5000 acres in the ranch.

During the recent high water of the Colorado river, the Southern Pacific kept a large force patroling the levees, also long trainloads or rock with engines ready for use in case of any threatened break.

HORTICULTURE.

Cantaloupe season is in full swing in Imperial valley.

Shipments of oranges from Riverside exceeds 5000 cars.

Etiwanda's grape crop this season is the best in many years.

San Fernando reports the earliest shipment of apricots for years.

Contractors are already in the field buying Etiwanda wine grapes.

The first watermelons in Imperial section were shipped last week.

Orange ranches are in keen demand in Riverside real estate market.

Tomato prices have ranged high in all shipments made from Brawley.

Riverside Horticultural Commissioners are making strenuous fight against red scale.

Highlands reports the biggest orange setting and promises for heavy crops for two years.

Riverside Enterprise reports certain vineyards of that valley showing immensely heavy crops.

Geo. L. Campbell has planted on his ranch near Silsbee, cuttings of the Black Morroc variety of grapes.

Apricot growers in Escondido have been selling apricots in carload lots at four cents per pound f. o. b. cars.

An incendiary attempted to burn the cantaloupe packing-house of the Brawley Fruit Growers Association last week.

Highland orange growers report the young fruit to be larger at the present time than ever before this early in the season.

Geo. Harold Powell lectured before Corona orange shippers last week giving information regarding better methods of handling fruit.

Four outfits are working in Riverside citrus orchards with the assurance that before this season closes the scale will be freed from their orchards.

Professors Steubenrauch and Eustace are visiting various citrus sections of Southern California with information as to the prevention of orange rot.

Cantaloupe output is expected to be lighter from the Imperial valley than first anticipated. It is estimated that Imperial will receive from $150,000 to $200,000 from this one crop.

J. W. Mills, in charge of the Citrus Experiment Station at Riverside, is making a number of interesting experiments, which it is hoped will be instructive, in fertilizing citrus trees.

The bringing of purple scale infested fruit into Redlands which was mentioned in the recent Cultivator, has caused Redlands people to be on the alert regarding any further shipments to that community.

The Santa Fe R. R. Co. has constructed a $4000 pre-cooling plant in its yards at San Bernardino. The plant will be in the nature of an experiment, and if successful, icing will in the future be unnecessary.

G. Harold Powell has gone East with his family and will later return to Northern California and investigate deciduous fruit decay. The next orange shipping season will find him in his same work in Southern California.

Northern California

AGRICULTURE.

Shasta county has harvested a fine crop of hay and grain.

Sierra valley in Plumas county reports big crop of hay and grain.

Some of the country press are calling attention of their subscribers to the anti-docking law.

Ukiah farmers are moving to establish a creamery at that place. A $10,000 plant is in anticipation.

Irrigation development in the neighborhood of Colusa is promised to bring that community more to the front than ever.

The trustees of the city of Porterville are merciful to the beasts of that section and are erecting water troughs by the roadside.

The Board of Supervisors of Sacramento county are making an extensive experiment in tobacco culture on the Colony Farm.

A. E. Boyton has begun a legal battle for all the farmers of the State to have a chance to purchase San Quentin grain bags.

Work of "unwatering" of Woodward Island near Stockton is progressing and already much of it has been planted to potatoes.

With an expense of the State Administration more than a million more than last year, farmers can count on a big, stiff tax this fall.

Modesto district reports great quantities of sweet clover, Melilotus alba, infesting the alfalfa fields, claiming it to have been brought in by foul seed.

Chas. J. Brand, specialist in the departement of agriculture of alfalfa, with other agricultural experts are visiting various points in the San Joaquin valley.

Hay press men in the neighborhood of Hollister are facing a shortage of baling wire. Even the San Francisco market is said to be clear of this commodity.

San Jose reports the hay crop to be exceedingly fine though somewhat short of the average. The Volunteer crop is reported as making a fine salable quality.

A scrap is on between the irrigators and a large power company, both claiming rights to the waters of Hat Creek near Redding. It is claimed the suit will be fought at every stage.

The Modesto Canal is carrying at this time 460 cubic feet of water each second, while 700 cubic feet flows through Turlock Canal. This is greater than last year's water supply for those districts.

The sheepmen are still urging an appointment of an inspector, but Gov. Gillett insists that until the funds to pay for these inspectors are forthcoming from the sheepmen he will make no appointment.

Australian rye grass for a foraging plant is proving to be very satisfactory in the neighborhood of Visalia and Tulare. Seed which was sown last December is giving grass which stands as high as a man's hand now.

A couple of farmers at Visalia are having a legal tout over one of them "stealing his own calf." The animal had been placed in pasture and was being held by the pasture owner for the payment of the pasture bill.

HORTICULTURE.

Nearly 40 cars of Valencias have been shipped from Lindsay.

Dried peaches are promised to range above ten cents per pound for choice lots.

Offers of twenty-five cents per pound have been made for dried apricots in Kings county.

Levee District No. 10 near Marysville is improving its levees by raising them an average of about three feet.

Seven thousand carloads of green deciduous fruit are promised as a total output of the northern end of the State.

Prune buyers are offering all the way from three and one-half to five cents basis on purchase for the coming crop.

Another boost has been given to raisin prices, being quoted at Selma last week at five and one-half cents per pound.

Orange planting in Orosi is being extended. This movement has been encouraged by the development of several strong wells.

Watsonville is making a heavier fight against the codling moth and claims the fruit will be finer there than for some time.

Fresno county has an acreage of 35,000 acres devoted exclusively to wine grapes, and 60,000 acres devoted to raisin and table grapes.

The total shipment in carload lots of deciduous green fruits from Vacaville this season is about five cars less than last season same date.

The rain precipitation at Sacramento in the storm of last week was .83 of an inch which is the highest for June since the big rain of 1884.

The peach crop of Yuba City will be about fifty per cent of the usual yield. The prices talked of are from $50 to $70 per ton for choice clings.

The State engineers will soon call a meeting to discuss and map out needed improvements in the levee system of Sacramento and San Joaquin delta.

Over ten cars of deciduous green fruit have been shipped from Cordelia near Vacaville. The output is said to be exceedingly satisfactory to the producers of that section.

Prof. M. Freeman, an expert on cereals in the department of agriculture at Washington visited the State recently calling upon Prof. Wickson of the State Experiment Station at Berkeley.

A Cultivator representative at Dinuba says that buyers there are offering five and one-half cents for raisins, 11 cents for peaches and 20 to 25 cents for dried 'cots and that all crops are looking well there.

The committee appointed by the Watsonville Chamber of Commerce to look into the matter of a district fair is still working with the expectation of having one soon. The committee wishes to obtain a portion of the State money for this purpose.

The untimely rain which was very heavy over the entire northern end of the State last week did far more damage than good, grain and cherries especially suffering. Some places reported as high as three-fourths of an inch to one inch of percipitation.

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YOU WILL FEED NO OTHER.

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The acknowledged standards of perfection. All poultry men who have used these machines have supreme confidence in their ability to hatch and breed. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis Worlds Fair for the greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. Filcher, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.

"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

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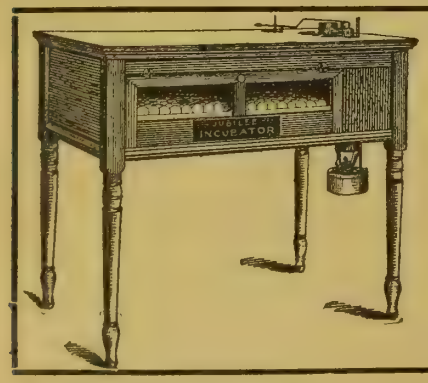

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The Jubilee Stands Supreme

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Beef, Blood and Bone Will Make Your Hens Lay

This is not a medicine but a high grade nitrogenous food. Write for free booklet, "How to make Hens Lay." Our Poultry Foods are sold by all local dealers and manufactured solely by

The Pacific Guano and Fertilizer Co.

Also Pioneer Manufacturers of *High Grade Fertilizers*. Indiana and Yolo Sts., San Francisco, Cal. Write for our free booklet, "Farmer's Friend." Valuable to all farmers and ranchers.

Bemis Plymouth Rocks

Barred and White

Prizes Won at Alameda County Poultry Association Show, Oakland, 1907—22 Regular Prizes and 3 Silver Cups. Can furnish best birds and eggs at reasonable prices. No incubators lots furnished

Mrs. Florence E. Bemis, 1757 19th Ave., Oakland, Cal.

Special Sale of White Leghorns

Mitchell Stock 200 Yearling Hens at $18 per dozen
100 2-Year-Old Hens at $15 per dozen

Also some choice White Leghorn and Black Minorca Cockerels. These birds are all in good condition. Hens are from my breeding yards and must be sold to make room for my young stock. Write or call. Satisfaction guaranteed.

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Henry Albers Co. 315 South Main Street Los Angeles

Profit in the Poultry Yard

We solicit short articles of a practiced nature from the fancier and utility breeder, giving their experiences with poultry. All inquiries pertaining to feed, management, disease and its prevention, will be answered through these columns.

WHITE PLYMOUTH ROCK.

WHITE ROCKS have attracted more attention in the last few years than any member of the Rock family. There is a cause for this, for no breed will continue to grow in favor unless they have utility as well as fancy. Several years ago Mr. Grant Curtis, President of the American Poultry Association, predicted that the next five years would see the "White Rocks" gain favor as they never had done before. We wondered why Mr. Curtis had said this for he was not a breeder of this variety. The remark caused us to pay more attention to the White Rock and study its practical characteristic. Today we find the White Rock has grown in favor with the fancier, also the utility man, until they have in many sections headed the list of Plymouth Rocks and, in fact, at many of the larger exhibitions they head the list of all varieties.

First Prize White Rock Cock
At Los Angeles Show, 1907.
Owned by Mrs. Amelia Sly, Hollywood, Cal.

History.

There is perhaps less doubt as to the origin of the White Rock than with their brother, the Barred. We say brothers for Mr. A. C. Hawkins claims to have started his strain from sports from Barred Rock and that he has kept them pure to this day day. But many claim, and we believe without good grounds, that there was White Leghorn and White Cochin blood used in their makeup. We believe that they originated from the Barred variety, for we know even in the oldest varieties of black fowls, even the Black Spanish, which is perhaps the oldest pure variety, that they occasionally threw white sports. This is due to a weakness in color vigor; the albino not having the quality of secreting the pigment which colors the feathers.

Years ago some claimed, and in fact do to this day, that a white fowl was not constitutionally as strong as a dark one, but this is purely a fallacy, for the White Rock is as vigorous and healthy as the Barred or any member of the Rock family.

A Scene in the Yards of Mrs. Amelia Sly
White Rock Specialist, Hollywood, Cal.

One point argued by many that there was White Leghorn blood introduced into the makeup of the White Rocks, is the fact that they are the best layers of the Rock family. While this may seem true, it is not necessarily so, for by careful selection the egg yield can be increased, and in breeding a white bird we believe that the utility purposes can be guarded better, as so much does not depend on color as in some of the parti-colored varieties.

Utility Qualities.

Had it not been for the utility qual-

ity of the White Rock, it would have been discarded long before it was perfected into the beautiful symmetrical fowl that it is today. We well remember when the White Rock was not a beauty from any point of view, but it was taken up by careful breeders and fanciers, who were determined that they would perfect it as other breeds have been. Today it will show kind treatment quicker than any fowl, which only proves for them that it has been bred to a very high degree, just as a thoroughbred horse will show kind and gentle treatment.

The White Rock is one of the easiest birds to breed up to and over standard size, which proves again that they are hardy, vigorous and constitutionally strong, or we could not push them above standard weight.

As layers they are all that could be desired as they mature very rapidly and the pullets begin to lay early. They are good sitters and kind mothers.

AROUND THE YARDS.

Table scraps are good for either old or young stock.

* * *

Never feed musty food, if you wish best results.

* * *

Watch the youngsters, as a little neglect will spoil a good prospect.

* * *

At this season you should give particular attention to the sitting hens. Keep them well dusted with a lice powder. Should you let the vermin get a start you will have much trouble getting rid of them.

* * *

The first year that we used trap nests we discovered that about one-fourth of our flocks were not worth breeding from. The next year we secured 20 per cent more eggs with 25 per cent less hens—we bred only from the cream.

* * *

Advice is the cheapest commodity on the market and worth as much to the one receiving it, so beware of the fellow that tells you there is millions in the chicken business. Experience is the best teacher and one that never deceives; also remember that labor has sure reward.

* * *

"Isn't an old gobbler about the most aggravating thing on a farm? If you start up a long-distance conversation with your hired man, the gobbler is sure to chip in and punctuate your remarks with his gobble, gobble, gobble. I believe it was that which taught me to swear. Being a family man my swearing is, of course, done in silence."

* * *

Infertile Eggs.

I recently set five hens from which were hatched just one chick. Have one large, lusty male with about 14 hens. His comb is red and he has every appearance of health and is now nearly two years old. Hens large fine birds that have never been sick. Feed principally wheat and table scraps, occasionally corn and Kaffir corn. One suggestion which has been made to me is that one cause of the infertility is that the yard is on a steep hillside with practically no leved ground. I considered it ideal on account of its gravelly nature and perfect drainage. But, tell me, does the steep hillside prevent the male from fertilizing the eggs?—M.

This in entirely new to us as we had never thought seriously of the above problem until it was sent to us. However, we believe that a very steep hillside certainly interferes with the male fertilizing the eggs.

We wish Mr. M. would place two or three hens that are laying, with cock either in a level yard or if he has no level ground, place them in the hen house for a week, set the eggs and furnish the Cultivator with the results. We would also like to hear from readers of the Cultivator who have had hillside experiences.

* * *

Turkey Troubles.

Will you please tell me what is the matter with my turkeys and what to do? They are just beginning to lose the down on their heads and get those red bunches like the old turkeys and seem to be in perfect condition, but every once in a while one will seem to be taken with cramps. After the cramps they seem to be paralyzed and lose the use of their legs. They will sit around for a day and then die. They have plenty range of both barley and alfalfa; also feed them dry curdled milk and chick food with plenty pepper.—L. J. D.

You are doing wrong by feeding your turkeys pepper. I sould say that they need no stimulant this time of year, but they do need grit, good sharp grit, constantly before them, and unless they have it will have indigestion. Another thing: You must look well for lice, head lice; one head louse will kill a fowl at this age. Charcoal should be before them also as it aids digestion. Also, don't feed young turkeys too freely. They will kill themselves on too rich diet.

* * *

Egyptian Corn.

I wish you would give me your opinion through the medium of the journal on feeding and analysis for poultry of Red Egyptian corn.—A. Subscriber.

For feeding properties and the analysis the Red Egyption corn is the same as the white, only poultry will not eat it as well as the white. For further information and an analysis of the Egyptian we would refer you to the Agricultural Experiment Station at Berkeley, as we understand it has made a thorough test of it.

* * *

Does It Pay?

Please let me know what you consider the best book on poultry raising for a beginner and what the present conditions are in Southern California with respect to poultry raising. Does it usually pay when conducted on a small scale?—J. O. V. B., Brooklyn, N. Y. City.

Your last question as to the probability of success in the poultry industry, when conducted on a small scale in California, is a rather broad one, and can only be answered in a general way. The opportunities for success in the poultry industry are the same in California as in any other State, and in the final analysis of this question the answer narrows down to the fact that it all depends on the person who is making the attempt. California climate and food products in the way of green food the year round are great helps in the poultry business here, as well as the high market prices for poultry and eggs. The poultry business is one that can stand an addition quite to the number of producers before it will become over-done in this section of the country. "Poultry West of the Rockies." In our opinion this is one of the best books on poultry raising.

Love usually tries to hide its noblest deeds.

Until the Chicks are over half grown, feed them dry

West Coast Chick Feed

Bright, pure, clean, made of the finest grains, seed, meat, etc., in just the right proportion to make a full rightly-balanced ration. They like it, too, and eat it up clean, for it contains no waste whatever. It keeps them healthy and wil make them feather faster, grow faster and larger than will any other feed. They need nothing else until over half-grown. If your dealer does not keop it, and will not get it, send $3.35 for 100 pounds, freight prepaid by us to any point in California.

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Poultry Supplies Incubators Seeds

We manufacture the Improved Pacific Incubators and Combination Brooder, and also the "Business" Incubators and Brooders, and they can't be beat.

Our stock of Poultry Supplies is large, fresh and complete, at the very lowest prices.

Come and see us at our new store. We'll treat you right. Or send in your orders.

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Excelsior Mills

Excelsior Chick Food

Excelsior chick food is a perfectly balanced ration for your growing chicks. Will raise the largest possible per cent. of your baby chicks. All pure food, no shriveled grain and filler used in its manufacture. Absolutely clean and free from dust. No waste.

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Ask for Excelsior. If your dealer cannot supply you write us. Circular free if you mention the Cultivator.

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Beef Scraps

GUARANTEED ANALYSIS:
Protein 65%
Fat 8%

Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

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GUARANTEED ANALYSIS:
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Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods

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THE WHITE WYANDOTTES THAT WIN AND LAY

$15.00 and Up Per Dozen

Lakenvelders, per pair, $8.00; trio, $10.00.
Mammoth Bronze Turkeys Reasonable.

Mrs. C. D. Hubbard, Box 282, San Fernando, Cal

200-250 Egg Fowls | WHITE WYANDOTTES | Over 60 Prizes This Season

Eggs Half Price for June. Orders now Booked for Day-Old Chicks for September Delivery.

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A. L. R. MANTZ Rural 21, Box 98k SAN JOSE, CAL.

Show Me the Man

That likes to know that his wife chopped the wood that cooked his supper because he forgot it, or that she or some one must clean the lamps. She is the best wife you will ever have. Now have the best

Acetylene Gas Machine

and make "you all" happy. We have it and guarantee it. You need it. Write right now.

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When writing advertisers, mention Cultivator.

CARE AND FEEDING OF CHICKS.

Acting on the invitation of the Cultivator to give experiences and points on breeding, Mr. Wheeler, of Perham & Wheeler, the Black Minorca breeders at Lordsburg, sends in the following timely article. Some day we hope Mr. Wheeler will give us his opinion of the Black Minorca as a money-maker.—Editor.

The Parent Stock.

Success in growing chicks very largely means success in the poultry business. This is the great battle ground and victory here means triumph all along the line. Chicks properly hatched, well-fed and carefully reared, kept ever on the move upward to final maturity, make the hens that lay a profitable number of eggs and keep the wolf at a respectful distance from the door.

The proper time to commence caring for chicks is before the eggs, which produce them, are laid. Keep the parent stock healthy and vigorous by giving plenty of good nourishing food, well balanced and of wide variety, combined with an abundance of green food, fresh air, pure water, and besides, don't fail to keep them busy, free from lice and in clean quarters. Hens are very much like other folks; they appreciate variety, and unless they have it, their appetites clog and the result is a falling off in egg-production and a lowering of vitality, which means weak germs and consequently weak chicks. Of more importance than the care of the hens is the care of the male bird. Remember he is "half the flock." The strain of breeding tells more quickly upon him than upon the females. The male should be given all he can eat two or three times each day, and for this purpose it will be found necessary to put him into a separate coop while he is eating. This may seem to be a great deal of trouble, but it will lighten the burden of caring for the chicks, as they will be much stronger and a large part of the causes for discouragement and failure will be removed.

The Brooder and House.

A great many chicks are killed in brooding. This is due to several causes: Improper ventilation, too much or too little heat, filth, lack of exercise and injudicious feeding. We use individual brooders heated by kerosene lamps. They are more trouble than a continuous brooder, but the added health of the chicks more than justifies the extra care. A 100-size brooder for 40 or 50 chicks is best. This brooder is placed in one of our colony houses, whose floor space is 4x7½ feet; 2 feet high in rear and 4 feet in front. The ends and back are perfectly tight to prevent draughts; the front is made of lath placed 1 1-4 inches apart with a 12-inch board at the bottom to prevent the chicks running out while small. A buralp curtain is arranged to cover the entire front of the house at night and on cold days while chicks are very small. When not in use this curtain may be thrown back onto the roof and the sunshine will flood the entire house, destroying disease germs and sweetening the interior.

As the house has no floor, it may be moved to prevent the grounds be coming filthy and also affording a fresh run. No outside run is necessary, for when the curtain is up, as it is unless the weather is very bad, the chicks have all the benefit of being outside, yet are protected. After the first week the chicks may be allowed to run by removing the 12-inch board at the bottom.

The brooder should be thoroughly cleaned each day. When chicks are a week old, the brooder should be placed in the sun five or six hours a day; this will reduce the mortality of the chicks fully one-half. While chicks are too young to be without heat so long remove the hover for a little sunning several times a day when chicks are feeding. The floor of brooder should be covered with fine sand to prevent excrement from sticking, also to take up moisture and odor.

Feeding.

We are firm believers in dry feeding as being the most satisfactory and successful method. There are a great many chick foods on the market and one should use great care in selecting, as all are not reliable. It will be found beneficial to have the floor of the house well littered with cut straw and to scatter the chick's food in this to induce the little fellows to exercise, for exercise means life and health. After chicks are thirty-six hours old, give them a very little chick food every two hours. Continue this process during first two weeks, then food may be safely kept before them on free range; but if yarded, feed about four times a day, all they will eat up clean in ten or fifteen minutes.

Keep fresh water, granulated charcoal and some kind of green food, such as lettuce, lawn clippings or chopped cabbage always before the chicks. Sour milk will be found an excellent addition to the other food and is much relished. Do not feed sweet milk, as it causes bowel trouble.

Cared for in this manner and allowed free range when possible, chicks will be healthy and strong, things of beauty and a joy forever.

Weaning.

Gradually reduce temperature of brooder from 85 degrees to about 65 or 70 degrees which will be at end of fourth week. Then unless the nights are very cool give no heat at all. Remove brooder and make roosts by using 3 pieces 1 r3 inches two feet long; set on edge with five 6-foot laths nailed across them 4½ inches apart, making a frame 6 feet long by 2 feet wide. Chicks will soon take to this roost and you will have no trouble about crowding. Do not be afraid of crooked breasts. Good strong, vigorous chicks seldom have crooked bones and the added growth and health of the general flock will more than offset the few crooked breasts caused by early roosting. When chicks are eight or ten weeks old take out the cockerels which will leave about the required number to a house.

When chicks are about three weeks old give them a mash in the morning consisting of three parts bran, one part middlings, one part corn meal, one part oat meal, one-fourth part beef scraps, two parts alfalfa meal or green alfalfa cut into one four-inch lengths,one-half part charcoal, a little salt. Moisten with milk if possible, or water, using but little moisture as chickens do not want slop. Make use of a great deal of energy in mixing and it will take less moisture. This feed should be cleaned up in five minutes. Gradually replace chick food with three parts each of whole wheat, Egyptian corn, cracked corn and two parts oats, either rolled or steel cut. Do not feed a great deal of meat. For our part we do not want our young stock to have all the beef scraps they can eat as it brings them to maturity to soon.

There is a great deal being said nowadays about early maturity, but we prefer the pullet that lays at six and one-half or seven months as a breeder, rather than the one that lays at four and a half or five months. Take a pullet fully matured, filled out in all proportions and when she does commence to lay she has the size and constitution to keep at it about 250 day in the year; her eggs will be large and her chicks strong. On the other hand, the pullet that lays in her babyhood never develops properly and will always be small. Feed to grow bone and muscle the first five months and the egg production will take care of itself. Of course, in our breed we desire large combs, but since the comb does not grow materially until the bird enters upon its final stage of development we want to postpone this last stage as long as possible in order to secure great size and strength. When nearly grown we feed a great deal of meat so that the comb develops very quickly and is quite as large as it would have been had the birds had meat during entire growing period.

Shade.

At this time of year, shade is a prime necessity. Chicks may be raised all summer if one has plenty of shade and takes pains to supply fresh green food. Be sure to keep your coops clean and disinfect them once a week with stove distillate and crude carbolic acid. This will keep out mites, lice and prevent diseases.

Finally, do not harbor runts; kill them and you will soon build up a strong, vigorous flock.—H. A. Wheeler.

SHADE'S RHODE ISLAND REDS
The World's best layers.
Write for Folder.
J. W. Shade San Bernardino, Cal.

WHITE, BUFF COLUMBIAN **WYANDOTTES**
And Golden Sebright Bantams, prize winners
Stock and Eggs in season
M. E. Dillingham, Box 67 San Gabriel, Cal

MY EXHIBIT OF
WHITE, BUFF AND PARTRIDGE **Wyandottes**
Won 26 Ribbons and Special Prizes
at the Poultry Breeders' Show, 1907
R. D. Box D87 L. E. BERKEY, Fullerton, Cal.

First Grade
ORANGE SEED BED STOCK
For Sale. Not too late to plant.
Southland Nurseries
F. H. Disbrow, Prop. *Pasadena, Cal.*

Los Angeles-Pacific Co.
(Electric Lines)
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THE DESERT.

Here is the ancient kingdom of the sun,
This barren, lowly waste of desert land,
Which for his own long years ago he won
And fiercely guards with flaming sword in hand,
Whose lightnings search the plain remorselessly,
Till all therein is tuned to flame's bright key.

His floods of light effulgently enfold
The plain with airy scarves of amethyst;
The ruddy earth and sands of tawny gold
Loom out like bands of flame through lilac mist;
Bright islands in the all-pervading flood,
The splintered porphyry rocks gleam red as blood.

The rainbow-haloed umber moon at night
Creeps in the upper dessert shyly past;
The stars, like myriad points of orange light,
Peep through the purpose shadow dim and vast;
And night and voiceless silence sit and brood,
Twin regents of the unbroken solitude.

Around this hermit kingdom thickly set
The patient hills in bony ridges stand,
With here and there a sentinel minaret,
Its feet deep planted in the burning sand,
Upon whose head, to whet his subjects' fears,
The braggart monarch rains his shining spears.

—Millard F. Hudson.

PLAN FOR COUNTY EXPERIMENT STATIONS.

A bill has been introduced into the Missouri legislature which authorizes any county court, on the petition of 50 freeholders or the resolution of any agricultural or horticultural society in the county, to establish and maintain an experiment station. This may be located at the county farm, or other land may be leased. Supervision is to be vested jointly in the county court and the State experiment station, and the work proposed is mainly that of demonstration.

United States Attoroney Lawler, of Los Angeles, has begun suit against the railroad companies handling cattle in Southern California and Arizona, because of alleged cruelty to stock in keeping them in cars 36 to 72 hours without water.

The owners of a packing-house of the Rialto Orange Company have begun suit against the California Citrus Union for $7720 because of an alleged negligence of the Union in causing the fire which destroyed their property a few months ago.

IT'S PENNY WISE.

Policy to set out a good tree, costing good money and then let the sun burn the bark or the rabbits gnaw it when for $1.00 an acre you can get Yucca Tree Protectors that are practically indestructible. Write for free sample of the wrap. Yucca Manufacturing Company, 2124 Willow Street Los Angeles.

Winters shipped her first full car of deciduous fruit last week.

Bees and Their Care

LOCATION OF THE APIARY.

A WRITER in Coleman's Rural World in speaking of location of the few hives which may be kept near the house says:

Perhaps the first consideration with small beekeepers is to have the hives within easy view of dwelling-house windows, so that issuing swarms may readily be seen from kitchen and living rooms. When only a comparatively small number of colonies are kept it is not necessary for one to be constantly in the yard, unless the apiary is so located that swarms cannot be seen from the dwelling. Time is valuable, and particularly so at the season when swarming is in progress, hence the beekeepers desire to avoid spending time watching for issuing swarms. Therefore, when it can be done, the hives should be set within view of the kitchen and dining room windows.

Not Near Road.

But, while this is advisable, too much cannot be overlooked in setting them there. Bees should never be set near much-used entrances, or near drives and public highways. Nor should they be set where it will be necessary to frequently pass before or between the hives in going to and from the house.

The hives, for the good of the bees, should not be set up against or even before the south side of buildings and dense shrubbery. Nor again on steep south slopes, unless shaded from the mid-day and hot afternoon sun by trees or shrubs. One is tempted to give the bees the benefit of the protection and warm sunshine thus insured, but nevertheless it is a misguided kindness in the end. Later, when the midsummer sun beats down upon the hives, the combs will be likely to melt down and both honey and bees lost.

The Best Place.

Perhaps the best location, when at hand, is a gentle eastern slope protected from hard winds by some kind of wind-break. In a place of this kind shade will not be necessary, although if a few low-growing trees or shrubs are there it will be well to take advantage of their shade during the heat of the day.

Hives may be set with entrances facing south. On strong southern exposures, however, set entrance to the north or northwest. The bees will be less liable to come out cool days, will not hang out so badly nor swarm so persistently, and will be less likely to abscond when newly hived. On western or northern exposures the entrances should face to the east or southeast. On the level they may be set to the south or southeast as is most convenient.

There is one thing in connection with the location of an apiary not usually taken into consideration, and yet which is of more importance than would seem at first. This is the condition and preparation of the ground.

Before undertaking to establish an apiary it would be well to plow and level the plot intended for a bee yard and then sow to some low-growing grass. Then set the hives in straight rows, two in a place, with fixed spaces between, so that a lawn mower could be used both between rows and between pairs. It would then be a comparatively easy matter to keep down weeds and to always have the yard in an attractive condition. Besides the unsightliness of an unkept yard, it becomes difficult to get around in going to and from and among the hives after a high growth of grass and weeds takes possession of every available nook and corner. Again, grass and weeds choke up the hive entrances to such an extent as to seriously impede the progress of the bees in going from and entering their hives. After, however, an apiary is once established in a certain place, it is often next to impossible to move it, even for a single season, therefore one must grapple with the weed problem as best he can. Usually, by arranging the hives as outlined above, it will be much easier to keep down weeds than where they are set about without regard to system.

But, aside from the great advantage of having the hives arranged orderly in regard to keeping down weeds and grass, it is better for other reasons to have them so. In the first place, it is more convenient to work with and over them, and further, records are more easily kept. Then, too, it looks so much better that instinctively beholders are at once impressed with the neat appearance of the apiary and imbued with respect for the bee-keeper and his vocation.

Generally, the first thing in taking off honey is to smoke the bees. A little smoke will drive them, while too much only confuses. Use just enough to divert the guards at the entrance of the hive.

HONEY PROSPECTS.

"The season is practically a failure in Southern California. Some of the largest producers in the vicinity of Los Angeles report no honey in sight, and are feeding. While there were good rains, yet subsequent weather conditions prevented the bees from doing much. While some sage honey will be produced in the extreme southern part of California, we are safe in saying that very little of it will find its way to any of the Eastern markets.

"Conditions have not been altogether satisfactory for Central California, and we do not expect, therefore, much of a crop from that section.

"Weather conditions have improved somewhat for the Northern States; but the season as a whole is still very backward. In many localities the bees are doing exceptionally well in making up for bad weather. Dandeloins have yielded honey and pollen as never before; and where there has been any fruit-bloom the bees have done well. Clover and basswood have been put back a couple of weeks; and if they do not come on too early there will be a chance for a fair crop, for the bees are now making double-quick time.

"The spring losses, however, have been very severe all over the country, south as well as north. The Southern States seem to have suffered more proportionately, as they were not as well prepared to stand the bad weather as their more Northern neighbors.

"Texas is not saying much, but the few reports are not particularly favorable. In Colorado, conditions have not been satisfactory; and the season in Florida has been a complete failure.

"There ought to be a strong stiffening of prices, for the market certainly will not be glutted with honey, and there will be very little glucose concoctions on the market masquerading under the name of honey to hold down prices. We look for a better market than we have ever seen before."

The above is from Gleanings, in Bee Culture, and makes things look blue for the California apiculturist. Much more so then the Californian is willing to concede. However, making some allowance for desire to bull the market it may be admitted that California will not have as big a crop as she may desire. But when it comes to "A very little, if any honey will find its way to any of Eastern markets," then our Eastern friends have another guess coming.

HOW BEES DIVIDE LABOR.

My experiments have revealed the fact that the division of labor among bees is carried to a surprising extent, says Proffessor Gaston Bonnier.

Bees which are seeking for pollen or nectar do not carry it, but merely carry the news to the hive.

A number of bees are sent out to strip the flowers, a number carrying pollen only, others nectar only, others again water only when water is needed. The number sent out is proportional to the number of flowers to be stripped, and by marking the bees with colored talc it was proved that each bee confined itself for the time being to one class of work.

The same bee might be seeking for flowers in the morning and collecting in the afternoon, but did not change the nature of its work without returning to the hive.

There seemed to be something in the nature of a working arrangement between bees of different hives, as when the work of clearing a certain area of flowers had once been commenced by a few bees from one hive these collectors were not interfered with by bees from other hives.—Louisville Times.

AN ADMIRAL WITHOUT COST

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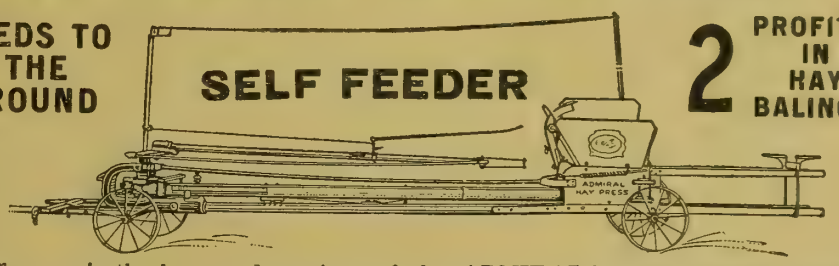

The difference in the increased earnings of the ADMIRAL THREE-STROKE SELF-FEED PRESS more than pays for the press in one season, at a conservative estimate of 2½ tons per day over the old style two-beat, foot-feed press, besides the ease of labor on both men and team, and better work. Let us figure a little to convince you.

2½ Tons per day for one week, 15 tons at $1.50 net.....$ 22.50
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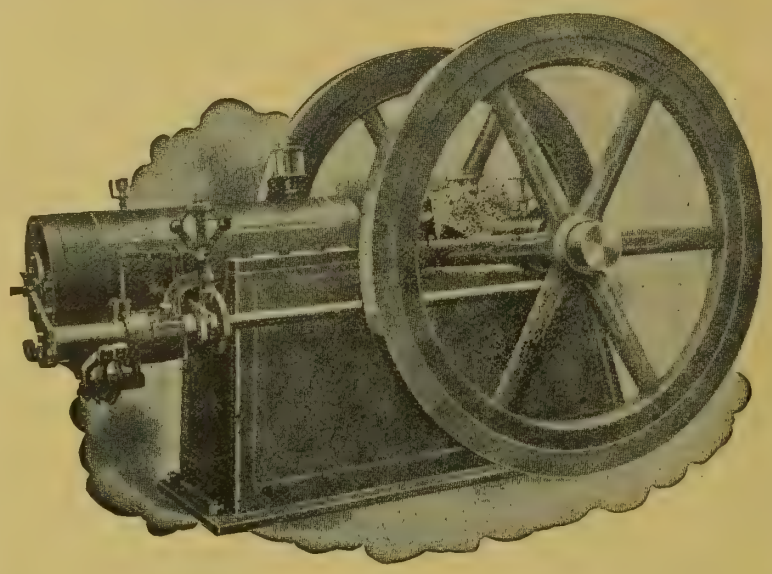

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Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

Wire Worms.

I enclose a worm that is destroying all of our garden truck. Began with peas. When about 6 inches high they wilt and die; then the beans went, the melons followed, finally the sweet corn. I find the worm begins at bottom of root and eats out the center. I send one stalk to show how they work. Can you tell us what it is and how to destroy the same?—C. A. L., San Jacinto.

The worm is the common wireworm which is the larvae of the snapping-bug or chick-beetles of the family of Elatiridae. Many children have been entertained by watching these peculiar bugs. But the farmer whose crops are ruined by the worm or larvae of the bug is not amused.

The worm is long, narrow, wormlike creature, very even in width, with hard covering and brownish or yellowish white in color. They infest the roots of many grain crops and as our inquirer says his garden crops are suffering. When they attack the plant in its susceptible period they not only "suffer" but are killed.

Unfortunately we cannot suggest any very satisfactory remedy for, as Mr. L. says, the worm eats the heart out of the root thus making himself almost unget-at-able without destroying every plant.

Comstock says: "Although we tried an extensive series of experiments, extending over several years, we were unable to find any satisfactory way of destroying the larvae infesting field crops. But we found that if the cells containing pupae or recently transformed adults were broken the insects perished. We conclude, therefore, that much can be done towards keeping these insects in check by fall plowing; for in this way many of the cells containing pupae or young adults would be broken."

A subscriber says that with much prized plants, he has saved them by taking carrots and packing in large flower pots with moss, taking care that the small opening at the bottom is well open up to the carrot. The pot is then sunk in the ground near the plant to be protected. The wire worms will go to the carrot of which they are very fond, when the pot can be lifted occasionally, the worms destroyed, the old carrot replaced with fresh "bait" and the work repeated. But with field and large garden crops thorough and deep tillage seems the only remedy and that largely for next year's crop.

Veterinary

Answers by Dr. J. Oliver, 318 E. 2d St., L. A.

Injured Colt.

I have a colt which has run on pasture the last year when something happened to him; do not know whether a cow hooked him or if he got snagged or that an abscess formed on him from some other cause. When I found him he had a very bad sore on the inside of his left hind leg up as close to the body as it could be and not be on the body. I doctored him for a while trying to heal it up, but could not, so was advised to give him something for his blood, which I did, and he seemed to pick up in flesh while before he had none. The sore did not heal and besides another formed on the left hip just above the flank. Discharged for about two weeks and disappeared then another formed right in front of the first and a little back of the stifle joint. I have washed the sores with creoline and carbolic acid in warm water and injected it into the cavity.—Mrs. W.

I think your colt has either splinter of wood or foreign substance of some kind. You should have the parts well opened up where the abscess formed and thoroughly explored. Then use a solution of the following inserted in with cotton on syringe twice a day: Raw linseed oil, spirits of turpentine; of each 2 1-2 ounces, compound tincture benzoin 1 ounce, shake and inject.

Founder.

I have had two mares which were taken sick after foaling. They were running in pasture and the third day after they foaled they appeared to be foot-sore and stiff like they might have been foundered, and when they make an effort to move their muscles quiver all over, and are in a good deal of misery. They do not have much appetite and remain standing almost all of the time and appear to have cramps in the bowels at intervals; also some fever, and it seems very hard for them to pass urine. The passages from the bowels appear to be normal.

The first one taken sick has partly recovered; she has brought four colts in four years; would it be well to let her rest a year.—J. M.

Your mares are foundered. The fever after foaling or perhaps took little cold is cause. I have seen two similar cases this year. Give two teaspoonfull of nitrate of potash in mash or dissolved in water for the drink twice a day for a week if necessary. It won't be necessary to let mare remain barren for a year.

Disease of Dogs.

We have taken your paper but a few months and find it very helpful. Would like to know if you know anything about a disease the dogs get here in their heads; seems to be an itching and burning in the ears and head; later it gathers and discharges; also goes through the body. One dog's foot would gather and discharge. We have lost two and are told there is no cure for it; also that children might contract the disease from them. We would like to know as soon as possible through your paper, for other people are having the same trouble, and we have a dog now we are afraid is showing symptoms.—Mrs. H., Downey.

From your description I could not say what the disease is with which your dogs are affected. Foxtail getting in the ears cause a diseased condition similar to that which you describe. They fester and discharge offensive matter from ears and sometimes from body and feet, wherever they get into the animal.

Bad Breath of Horse.

Have a mare with a very disagreeable odor about her breath, seems to be worse sometimes than at others times. What should be done for same?—A. R. S.

Have her mouth and teeth examined; this is often the cause of bad breath. Beards or foxtail often work in under the tongue or between or on side of teeth.

Mange on Horses.

Another query comes as to remedy for mange on horses. This was answered on page 602 of issue of June 6. Dr. Oliver also says that a solution of phenol, 4 ounces to a quart of water is a good remedy.

Irrigation and Forestry

LIFTING WATER FROM WELLS.

IN encouraging its subscribers to secure irrigation water by pumping, the Deseret Farmer says:

"Where valuable crops can be grown and marketed profitably, pumping stations can be made to pay well. In California, where the land and the climate are specially fitted for fruit growing, and where well water can be had within 500 feet of the surface, such land is said to be worth $500 an acre."

Unless the type-setter added an extra cypher, we think the Farmer has another guess coming for we don't believe any crop now grown is profitable enough to stand up under a 500-foot lift of water. To pump water such a distance is very expensive. If it's 50 feet, then go to it for there's money in it.

Regarding the wells, the paper then quotes from a paper by F. H. Newell, as follows:

Surveying for Irrigation

The Well.

The most economical well for securing water in the quantities needed for irrigation is a well from 12 to 15 inches in diameter, extending into the water-bearing gravels 30 to 60 feet according to the thickness of the gravels at the place where the well is drilled. Strainers for these wells can be made of slotted galvanized iron. The perforated metal should be placed opposite all the coarse gravels, or at a depth of 10 feet below the surface of the water. These strainers can be made by any mechanic by punching 1-8x1-inch slots into heavy galvanized iron and then riveting the sheets into cylinders of the proper diameter. The cylinders should be rolled in such a way that the burr made by punching the slots will come on the outside of the finished casing, and so that the slots will be vertical.

A much better strainer can be made by purchasing the metal in sheets already perforated. For this purpose steel sheets 48x120 inches in dimensions, perforated with hit and miss slots, 3-16x1 inch, and galvanized after the perforations are made, will make ideal strainers. When rolled into cylinders these sheets form a casing about 15 inches in diameter. In constructing the well the perforated sections should be put in place, one above another, to within about 10 feet of the water-level; from this depth upward, the casing should not be perforated.

Distance Between Wells.

If it is necessary to construct several wells in order to secure the amount of water required for an irrigation plant, it becomes important to consider the best and most economical arrangements of the wells. Two different methods will be found available for this purpose. If the amount of water required is not greatly in excess of that which can be supplied by a single tubular well, it is often found practicable to construct a large dug well, 6 to 10 feet in diameter, to a depth of 5 to 10 feet below the water level, inserting in the bottom of the dug well several feeders of perforated galvanized iron, as described above. This method has the advantage of permitting the pump that is to recover the water to be submerged in the water of the well.

In order to sink a dug well the proper distance below the water level, it is necessary to construct a wooden, brick or concrete crib that will sink as the material is removed from its interior.

Another method of securing a large quantity of water is to sink a battery of wells and connect them by suction pipe to the pump. This method is adapted to secure a larger supply than the method just mentioned. Three or four, or more, wells can be arranged in a straight line, 20 to 30 feet apart, and connected to a pump placed near the center of the row of wells. Probably the most satisfactory pump for use in irrigation is the centrifugal pump.

Source of Power.

A popular source of power for small pumping plants is the gasoline engine. Where the price of gasoline is high, it is very easy to make the cost of water phohibitive by the use of such power. Whether or not it pays to pump water by gasoline is a matter which depends very largely upon the distance the water must be lifted, and also upon the kind of crop that is to be irrigated. Gasoline, even at a high price, is usually a cheaper fuel than coal in an ordinary steam engine of small horse power, such as a common traction engine.

How High Water May Be Lifted.

It is very unlikely that it will pay to pump water, under present conditions in the valleys of the western plains, to a total height of more than 30 feet, including the suction lift of the pump. If the pump lower the water in the wells 10 feet, and if the distance to water be 10 fet below the ground, and the discharge pipe be brought into a reservior or flume 5 feet above the surface of the ground, the total lift will be 30 feet, if 5 feet be added to cover loss of head due to friction in suction and discharge pipe. reservoir is absolutely necessary for best results with small pumping plants. If the supply of water exceeds 500 gallons per minute it is possible to dispense with the reservoir, especially if the supply greatly exceeds this amount. Plants furnishing over 1000 gallons per minute can usually be bost operated without the use of a reservoir.

THE WHITE FLY IN CALIFORNIA.

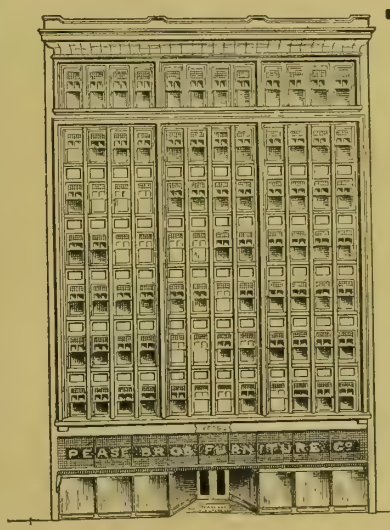
Continued from Page 643

is still confined to the city limits of Marysville. There are no citrus orchards in the immediate neighborhood. Possibly therefore it may not have reached any other section. If let alone it will certainly reach every part of the State. The trees in the immediate neighborhood of the railroad tracks are now infested. The electric cars pass between infested trees going to the orange orchards of Butte county. Now, if ever, is the time to make an effort to destroy the pest. There is no possibility of throwing a quarantine around the infested district that a flying insect will respect. To delay all efforts towards eradication till next winter, as seems now to be the programme, may be a fatal error. Every day during the latter part of the summer thousands if not hundreds of thousands of these minute creatures will be in the air capable of living long enough to be carried, in a car, the length of the State. A single one of these reaching a citrus district might make the eradication of the insect an impossibility.

In order to irrigate economically from pumping plants it is usually desirable to pump the water into a reservoir having a capacity equal to the amount of water the plant can furnish in six to eight hours. Such a bility. It may be that already the insect has gotten beyond control, but the chance of eradication is certainly worth the effort.

If eradication is to be attempted, no half-way measures like spraying or fumigation are to be thought of. There is too much oportunity to miss some and no means of discovering the fact. A campaign of eradication should include: first, the immediate destruction of every leaf on all citrus trees in Marysville and of every other plant known to furnish sustenance to this insect; second, a thorough inspection of the new foliage as it comes out on the defoliated plants; third, an exhaustive search for other possible food plants of the white fly; fourth, redefoliation and persistent reinspection of any spots where the fly may not have been annihilated; fifth, careful inspection of every supposed case of white fly in the State; and finally competent scientific supervision of the work.

There will be very few adult flies produced during this month and the early part of July. After that the em will be much greater and the chances of success corespondingly lessened. Will those most vitally interested see that the work is undertaken?



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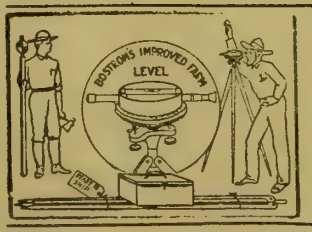

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Household Department

TELL YOUR MOTHER.

Tell your mother—have no secret
You would not to her disclose,
For her love would be no weaker
If all the world should be your foes.
Tell your mother—if some question
You are puzzled to decide;
She is older, wiser, calmer,
And will be your safest guide.

Tell your mother all your wishes,
All your plans and hopes and fears,
And you'll have much less of folly
To repent in after years.
Tell your mother, trust her counsel!
Rather than some young friend, gay,
Weary hours she's worked for—loved you,
Cause her not one anxious day.

Tell your mother—'tis a motto
Worthy every girl and boy,
And if followed, it will bring you
Pleasure sweet without alloy.
Then who'er be your companions,
In whatever place you move,
Let your conscience ever witness
"Mother knows and does approve."

—Selected.

THE FAITHFULNESS OF OLD DUKE

WHEN we are young and light-hearted, as well as light-headed in some cases, we take in strong likes and dislikes, of which afterward we are oftentimes sorry or ashamed. One of my dislikes was for dogs—just an imagined dislike and fear my only brother, who kept a goodly supply of hunting dogs, often declared.

But while I was yet a little girl baby my brother went away to a distant State to engage in business and there married and made his home. After some time we heard at the old homestead of a baby boy in his family, and three years afterward of his death. Several months after this sad tidings, a letter from brother came to me, asking if I would not come and take charge of his house for a while, as his wife had never been quite well since the death of their child, and he had finally persuaded her to go away to a famed mountain health resort. She would go provided I would take her place in her home, as she understood I was quite a notable little manager.

My brother's home was such a lovely one, with its outlying lands, bordering on the suburbs of a large city, and, as I entered its sitting room, I espied a long, low window in it that overlooked a scene worthy of the brush of an artist—a long vista of sloping lawn, its velvety green starred by clumps of radiant flowers, while fountains played in the golden sunshine, stealing through the trees above, and beyond the white highway, through the emerald meadows, a silver-tinted stream wound its way to the sea. "Oh, the beautiful picture!" I breathed, as I dragged a small rocker to the window. "I now and hereby lay special claim to this window as my own while I remain in this house."

"Something else has a prior claim on that window," spoke my sister-in-law from the divan on which she lay near by. "But he is kind and will allow you to share it with him. Poor Duke! He never forgets—no more than I do."

I gave little heed to her words, said with such a sad tone, but across the river had caught a glimpse of a man, young and handsome, as I could see even at that distance, going into a tiny white cottage nestled in the meadows. In his hand he carried a basket, and on his shoulder a fishing rod.

Who is it?" I asked "That cottage and those meadows belong to brother, do they not?"

"It is a Mr. Smith, who claims to live in the South somewhere. He rented the cottage for the fishing season. He comes up here quite often, and Arthur seems to have taken a liking to him because he has been everywhere and knows so much. You know your brother loves a race horse, and what an enthusiastic hunter he is. Well, Mr. Smith has the same tastes in these lines, and lots more experience in either than Arthur. And that constitutes the affiniity between them. But don't you go falling in love with him. He has beautiful eyes, and is very strong and athletic, but there is something about the lower part of his face that I don't like. His mouth is cruel, and his jaw too broad. Then, I feel this better than I can explain it, but I am almost sure that he is not an educated man. His way of saying things is so queer. Arthur thinks I fancy this and"—her words were interrupted by a great brown body swinging into the room and making straight for me. I screamed and clung to my chair. I thought I was going to be killed before the chair finally overturned with me, and I rolled out of contact of the big brute, and now placing himself comfortably on the rug beneath the window, after which he laid his huge head on the low window sill and scanned the driveway and road beyond it.

"Stop your screaming," my brother's wife said, now sitting up. "That is only old Duke, Willie's dog. I called to you to sit over and share part of the window with him. When they took our darling out of the house forever, Duke sat in this room and cried so mournfully. He watched them from that window go down the driveway, and now he lies close to it when in the house, watching for Willie to come back, we think."

"I can never, never stay in a house with such a dog coming and going at will. Ugh! The big, ugly, wild-looking thing!" I exclaimed, shivering and drawing away from that part of the room.

"We will never part from Duke," said my sister-in-law, quietly. "And he isn't one bit ugly. That dog would never let Willie out of his sight, and he saved his life twice that we know of; once from drowning and once from a mad steer that had broken loose. He is faithful to every inmate of this house. You will not be afraid of Duke when you are here awhile."

I made up my mind from the very start that I would not try to like Duke or try not to be afraid of him, and I made up my mind just as positively the first time Mr. Smith showed his goodly form and beautiful eyes in my brother's house, after my entry into it, that I was going to like him in spite of sister's forebodings that his character, because of that look about his mouth, was not all that it should be. I told her before she went away that she was full of fancies for Mr. Smith, who now called on us quite often, and whose manner toward me, when we were alone, was not to be mistaken. When she had gone some time, he said:

"I never saw a girl I thought quite so handsome, or liked as well as you. Do you love me?"

Somehow, for the first time, I felt that ring in his tone, that certain way of giving expression to the spoken words, that my brother's wife had spoken of. It jarred on my whole being, and I drew my chair away from the close proximity to the one in which he was sitting, as I answered:

"I am not going to marry until I am twenty-one. We will have plenty of time to get acquainted before that time, and there will be plenty of time for me to answer your question."

And then, as the words were scarcely spoken, girllike, I repented for my harshness, as I called it then. One day my brother said:

"Lily, I am going to see how Laura is getting along, for myself, and whether she is improving as fast as she thinks she is, or if it is just an excuse to get home. I may stay a week, and I want to tell you something, for I know your venturesome ways. You don't want to let Jake go away at night, and every night let Duke have free access to all the lower part of the house. There are burglars about our town—burglars who do not hesitate to take life, if detection is imminent. No burglar can get in this house if Duke is given free range in it at night. Now, remember this."

I thought of it just as long as he was telling it and no longer, but I noticed that after his departure Duke, who had seldom noticed my presence in the house, much to my horror, took to following me everywhere, and keeping a close watch over me. He was lying near me on the veranda when Mr. Smith called, the first evening after brother had gone. "I hate the very sight of that dog," I said, in a petulant way. " I wish he were dead."

"I fear him," said my visitor. "I am sure he hates me, and I am certain that he will try to kill me. He follows me almost every evening that I leave here, and more than once I have found him crouching ready to spring on me. What is the use of keeping such a wild beast about the house?"

"O, mercy," I said, in a fright; "If I thought that he would ever hurt you, I would poison him. Indeed, I would. Why can't you? It would soon be over. He is only a dog. I can never, never have any peace in this house while he is in it."

"You forget," he said quietly, "that the dog will not eat anything given him by a strange hand, but I can bring you something, if you say nothing about it, that will bring death quickly and painlessly. You can give it to him."

Besides myself and the cook an elderly woman, there were two other persons left in the house, the dining-room girl and Jake, her lover, who looked after the horses and yard. The next night Jake asked permission to go to a dance in town with his sweetheart, and I immediately said yes to that proposition. Very early the cook went upstairs to her room, leaving the house below to Duke, who seemed uneasy this evening, and myself. After dark some time Mr. Smith came for a brief call and, handing me something

done up in a paper, explained that it was a bit of fresh beef for Duke, and I threw it to the dog, and then turned away that I might not see him gulp it down. I heard him dart out of the room, and the house, as I thought, with it. And then I heard no more of him. Mr. Smith remained but a few minutes, scolding me gently, now I remember, for allowing Jake to go away, and helping me, as I supposed, to lock up the back part of the house.

When he had gone, although Jake carried a key to the front door, I determined to stay downstairs until his return, and after closing all the doors between the rooms lay down on a couch in a small room adjoining the sitting-room, and soon fell asleep, to be awakened after awhile by something moving stealthily in the next room. My heart almost stopped as I put my ear very close to the wall to listen. The sound was exactly like that made by Duke at times when pacing through the rooms. But Duke was lying outdoors, cold and dead, of that I felt sure. The sound continued, weird and ghostly. Silver-tongued and very costly clock chimed out twelve from the dining-room, and when it stopped I heard a faint click, click, following it. And now I sat up, trembling with apprehension that had nothing to do with the unearthly. My brother's house contained much of value worth carrying away.

I tiptoed my way to the dining-room, the door of which stood partly ajar, although I had surely closed it. The lamp was burning low and I was half way across the room before I noticed the plate piled in a heap on the table, and someone kneeling at the safe, the door of which stood open. He raised up, and stricken with surprise, I staggered back, crying:

"Oh, Herbert—Mr. Smith—not you—surely not you!"

He came toward me, a look on his face that turned my heart to ice. I sprang back, catching the knob of the sitting-room door, in desperate hope of finding safety that way; for I read his intention in that look. As my hand closed on the knob he caught my throat to stifle the scream on my lips, and I heard him mutter as a knife flashed up in the other hand:

"Dead, you cannot talk."

My grip on the knob turned it, and as I went back with the door, the knife missed its mark and came down on my arm. As it was again raised, something dark and ponderous sprang over me, with an enraged howl, and bore my assailant backward, bleeding from the white, sharp fangs tearing at his throat. That moment I realized that Duke was not dead, and the next, with my arms around his neck, I was pleading with him as though he was human, not to kill the man under him. And Duke seemed to understand and obeyed me, although he would not loosen his hold, after the cook had sent in a call for the police, and they had come, bringing a doctor to attend the wound on my arm, until I bade him do so. And then, though badly gashed himself by that horrid knife, he lay down by me, and watched the doctor bind up my arm.

With feelings of shame and thankfulness I can never forget, I found that meat under a foot-stool in the sitting-room, where Duke had made way, after I thought he had left the house. And there, lying by the window where I could not see him for the darkness, I had shut him in. How near I had come to death because of my disobedience and hard heart I never told for many a year afterward.

Mr. Smith proved to be a very polished but at the same time a very dangerous burglar, wanted in several places for greater crimes than burglary.

"And to think," said brother, "that I was so decieved in the fellow, even to the extent of introducing him to my home."

But you may know that I never let on that I had been deceived into nearly loving him. Duke knew it, but Duke, thank fortune, couldn't tell it. Did I love Duke after that? Well, you may know I did, when my brother's wife came back, fully recovered, and I went home, I insisted on taking him home with me, and, as Duke seemed to love me just as tenderly as he had loved Willie, she finally consented for him to go with me. I kept Duke as long as he lived, and I believe that my love for that dog taught me to love all things in a better way.

HOMELY HINTS.

Old fowls are made tender by adding two tablespoonsfuls of good vinegar to the water in which they are cooked.

For tin covers, etc., the following mixture is excellent: Shred half a pound of soap into a bowl with a large ball of pounded whiting, and add enough warm rainwater to make a paste of the consistency of cream. Take a little of this paste on a piece of clean flannel and with it rub the metal. When dry polish with a leather and a little dry whiting.

Every tea caddy should be air tight. Tea owes its flavor to fine volatile oil which is present in very minute quantities. If exposed to the air this volatile oil rapidly disappears and the tea at once loses its aroma.

Only a few people know that butter will remove tea, coffee or fruit stains. It should be rubbed on the linen or cotton and then the material should be soaked in hot water and a mild soap. In fact, any stain except ink yields to this treatment.

A good furniture polish consists of two parts of raw linseed oil and one of turpentine. Mix thoroughly by shaking. Apply a thin coat with a flannel cloth and then rub thoroughly and briskly with a dry cloth.

To temporarily stop a leak in a pipe, use yellow soap and whiting mixed into a paste with a little water. This will not prevent the necessity of a visit from the plumber, but it will enable you to await his coming.

If anything becomes sticky with flypaper, use kerosene oil to clean it off. It has done for everything we tried. I used it on a leather bound book; it removed the stickiness without harming the binding at all. Used it on book leaves, cloth, etc. Try it.

Many darn worsted stockings with worsted. This is a blunder, the consequences of which show themselves very rapidly. The worsted always shrinks, and then the darn is contorted and drawn up out of shape, to the wearer's distress.

Mildewed linen should be soaked for several hours in buttermilk and then washed in the usual way.

To clean a dirty boiler put about a pound of caustic soda into the boiler, nearly fill it with water and boil for an hour or more.

You need not be caught thirsty

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LINERS

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Advertisements in Liner Column 1¼ cents per word. Eight words to a line. No advertisement taken for less than 25 cents.

EGGS FOR HATCHING.

AT REDUCED PRICES BALANCE OF season from my prize winning Barred Rocks;won all special and 13 regular prizes on Barred Rocks at late Los Angeles show. Eggs from best pens, $2.50 per 15; $10 per 100. Can furnish any quantity. Also offer extra bargains in breeding stock. CHAS. E. SMITH, Gardena, Cal. San Pedro Interurban car to Smith's Crossing.

McKINLEY POULTRY FARM—BREEDERS of Bluff and White Wyandottes. Member American Buff Wyandotte Club. Golden Seabright and Pyle Game Bantams. Eggs $3.00 and $2.00 per 13. Take San Pedro Interurban car to McKinley, first house north. BOX 11, R. F. D., Gardena, Cal.

BLUE RIDGE POULTRY YARDS, W. H. Brown, Prop., 128 Ave. 32, Los Angeles, Cal. Breeder of Blue Andalusians. Won more first prizes than all our competitors combined. All specials went to our strain. Eggs $1.50 and $2.00.

A. C. WHITE LEGHORN EGGS FROM THE bred-to-lay Blanchard strain. Large birds. $1.00 for 15; $6.00 per 100; Free city delivery. C. M. GIBBS, R. F. D. No. 4, Los Angeles, Cal. Phone W. 591

POULTRY.

WHITE PLYMOUTH ROCKS EXCLUSIVEly. The largest flock of prize winning birds in the West. At the late Los Angeles show, 1907, we won twenty-three out of a possible twenty-five prizes. We offer extra bargains in our this year's breeders. Will sell to suit purchaser. Eggs $2.50 per 15; $10 per 100. A. J. LITTLE, Monrovia, Cal.

SINGLE-COMB WHITE LEGHORNS, FINE white, large birds; good layers. Hatching and shipping chicks. Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER, Ontario, Cal.

MACHINERY.

BARGAIN—3½-HORSE DIRECT CURRENT motor (connect with trolley; pump, saw wood or run machinery.) Good rope orange grader; rotary lemon or orange washer; Baker brusher; ton scales, pulleys, belts, shafting. All cheap enough to utilize in orchard or warehouse. PASADENA LEMON GROWERS' ASSN.

CHEAP FOR CASH—ONE 34-H. P. FAIRbanks Gas Engine in good condition, and can be seen in operation at our plant. AXELSON MACHINE CO., 1406 San Fernando St., Los Angeles.

DUCKS.

INDIAN RUNNER DUCKS—PURE BRED; no eggs equal them for table use; no bird lays as many eggs in one year. Place a dozen under that old hen. Eggs for hatching, 50c per dozen; $3.50 per hundred. JOHN W. LYON, E. Palm Ave., Gardena, Cal.

INDIAN RUNNER DUCKS—EGGS AND stock for sale. Eggs, $1.00 per 13; $5.00 per 100; stock, $1.00 up. Black Langshan prize pen, $2.00 per 13. CLYDE J. MOSS, successor to F. M. Bender, Corona, California.

POULTRY FOODS.

ARMOURS BEEF SCRAPS, MEAT MEAL, and Blood Meal for poultry feeding are highest in digestible protein. If your dealer does not handle them write us direct. Circular containing formulae free. THE ARMOUR FERTILIZER WORKS, 736 H. W. Hellman Building, Los Angeles.

FARM LAND.

LAND BY WHICH YOU MAKE MONEY, because it costs but $18 to $25 an acre, with abundant water at 50c an acre. Easy terms. Grand crops. Good markets. Fare rebated. Address, W. R. GILSON, 333 I. W. Hellman Bldg., Los Angeles.

LADDERS.

"CHAMPION ORCHARD LADDERS" ARE the very best. Selected spruce. Malleable iron heads, painted. Light and strong. Many of the largest dealers handle them. Sizes, 6 to 20 feet. Price, 27 cents per foot. F. O. B., San Jose. Write for full information and description. H. H. EDMUNDS & SON, 8 Story Road, San Jose. Cal.

MISCELLANEOUS.

FOR SALE—AT A BARGAIN—GOOD LOOM for weaving rag carpets or rugs. Address, 1103 PARK AVE., Alameda, Cal.

FOR PRACTICAL COW MILKING MAchine see O. J. WEBER CO., 555-557 S. Los Angeles St., Los Angeles.

FOR SALE—SANTA MARIA DAIRY route, with or without cows; plenty of alfalfa available. No opposition. L. L. LANGLOIS, Santa Maria, Cal.

SIX HUNDRED FRUIT TRAYS FOR SALE cheap. Two by three; good condition. JOSEPH THORNDIKE, Pasadena, Cal.

The percentage of an average crop that may be expected this year in the Pajaro valley is placed by some authorities at 30 to 35 per cent Bellefleurs; 50 to 60 per cent for Newtown pippins, with about a like percentage as a whole for crop for other varieties. —Pajaronian.

San Diego county stock men have planned a meeting for the purpose of taking steps toward eradication of the Texas fever tick, which will be held at Escondido.

The Produce Markets

Los Angeles Markets

LOS ANGELES, June 19,1907.

While the market is not showing a weak tone, it may be said that a material shading in prices is observable. As the movement toward the beaches and mountain resorts sets in the consumption will decrease here and probably show a greater shading. One thing surprising is that eggs, even, took a tumble on Tuesday of a half to a cent. This is generally considered temporary though some maintain that the market had been bulled beyond legitimate conditions by speculators. But the warm weather probably had more to do with it than any other feature.

Butter.

Butter stands at last week's quotation and the market is very firm.

Creamery extra	57½
Creamery first	55
Dairy	24

Cheese.

Cal. Young America, per lb	19
California Anchor	18
Cal 3-lb. hand	20
Northern fresh	15¾
Domestic Swiss	23
Imported Swiss	30½

Eggs and Poultry.

The prices given are those of the commission man to the retailer.

Eggs, local, candled	24@24½
Eggs, case count	22@22½

Poultry again shows a decline with the market very weak. This will probably continue as the molting season approaches.

The following are average prices which dealers pay to producers for live weight:

Hens, per lb	11
Young roosters, per lb	15
Fryers	17
Broilers, per lb	17
Old Roosters	7
Turkeys	17
Geese	12
Ducks	10
Squabs per doz	1.50@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, from 175 to 200 lbs	7½@8
Prime steers	4¼@4½
Hiefers	3½@4
Calves per lb.	5
Sheep, ewes, per head	4.75@5.25
Lambs per head	4.50@5.00
Wethers	5.50

Potatoes.

Colorado	2.00
Minnesota	1.75@2.00
Oregon,	1,80
New, Early Rose	2.00@2.30
New, white	2.00@2.25

Onions.

Silver skins per ctl	2.00@2.40
Imperial per crate	1.45
Imperial per sack	2.30
Garlic	12

Vegetables.

Asparagus lb	12½
Artichokes	30
Beets per doz	30@40
Bell Peppers green lb	20
Beans, wax	4@6
Beans, green	4@5
Cabbage, sack	1.00
Celery, Hothouse, per doz	1.50
Chili peppers, green	15
Cucumbers, per 20 lb. bx	1.00
Corn per bx	75
Cauliflower	1.25
Carrots per doz	30@40
Egg Plant per lb	25
Green Onions, doz bunches	10@30
Lettuce, per crate	50@75
Mushroons per lb	1.00
Okra, per lb	20
Rhubarb per box	1.25
Radishes per doz	15@20
Summer squash, crate	35
Tomatoes, Mexican, crate	1.00@1.50
Turnips, doz bunches	40
Peas, sugar, per lb	4@6
Spinach, per doz	10@15
Water Cress per hundred	40

Citrus Fruits.

Valencias	1.50@2.75
Navels	1.25@2.50
Grapefruit Seedless	2.00@2.50
Grapefruit Seedlings	1.25@1.35
Seedlings	1.25@1.50
Lemons, fancy	2.00
Lemons, choice	1.25@1.50
Tangerines, halves	1.50@1.75

Fresh Fruits.

Apples, Ben Davis	1.50@2.00
Apples, Red Astrachans, box	90@1.25
Pearmains	1.75@2.00
Apricots	1.25@@1.35
Blackberries	3@4½
Currants per 4 bskt crate	1.10
Cherries, loose	11@15
Cherries black	1.25@1.50
Cantaloupes, Ponies	2.50
Cantaloupes, standard	3.00
Figs black per lb	17@20
Grapes, per 4 bskt crate	1.75
Gooseberries, per bx	1.75
Logans	5@6
Loquats	2½@3
Peaches, per bx	75@1.00
Plums	1.25@1.35
Raspberries	5@7
Strawberries	4@6
Watermelons, per lb	2¾@3

Dried Fruits.

Evap. Apples, fancy per lb	8½@10
Apricots	20@22
Peaches	12½
Pears	13
Prunes, 40s to50s	7½@8
Prunes, 50s to 60s	7
Prunes, 60s to 70s	6½
Prunes, 70s to 80s	6
Raisins, layers, 3 Crown, 20 lb bx	2.00
Raisins, clusters, 4 Crown, 50 lb bx	4.00
Raisins, clusters, 4 Crown, 20 lb bx	2.25
Raisins, clusters, 5 Crown, 20 lb bx	2.75
Raisins, clusters, 5 Crown, 5 lb bx	.90
Raisins, clusters, 6 Crown, 20 lb bx	3.50
Raisins, clusters, 6 Crown, 5 lb bx	1.00

Beans, Dried

Limas per ctl	5.25
Pink No. 1	3.00
Lady Washington	3.00
Small White	3.20
Black Eyes	5.75@6.00
Garvanzas	5.75@6.00
Lentils	12½

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted White	6
Light Amber	5@5½
Comb, water white, 1-lb. fms	12@15
Light Amber	10@12

Nuts.

Almonds per lb	19@25
Peanuts, Virginia	9
Peanuts California	6@7
Walnuts, No. 1 S. S.	14@15

Hay.

Barley, No. 1	14.50@16.50
Barley, No. 2	11@12
Alfalfa, northern, per ton	12.50
Alfalfa, local	12.00
Alfalfa, local, new	13.00
Plain Oat No. 1	17@19
Wheat No. 1	12@14

Grain.

Purchasing prices f. o. b., Los Angeles are:

Wheat, new, per cwt	1.70@1.75
Wheat, Sonora	1.52½@1.57½
Barley	1.17½@1.22½
Corn, Eastern, sacked	1.50

Feed Stuff.

Selling price F. O. B. Los Angeles as follows:

Cracked corn	1.65
Shorts	1.45
Bran	1.30
Egyptian corn	1.65
Rolled Barley	1.40
Feed meal	1.70

Benjamin Snow is suing the Dinuba Creamery Association for money which should have been received for butter sold to an insolvent Los Angeles dealer. The patrons of the creamery were receiving their pay on the basis of the selling price of the butter, but while the price at which the butter was sold was good, the money never being received, the creamery management claims to be exempt from making any payment on that particular cream.

Ex-Governor Pardee in accepting an invitation to address the people of Salinas on irrigation at their big meeting to be held June 27th commends them for the step they are taking to secure government aid in irrigation.

The bond election of the city of Los Angeles last week, at which time bonds for $23,000,000 was voted for constructing canal to convey Owens River to the city, was one of the most important events in Southern California in many months.

San Francisco Markets

SAN FRANCISCO June 18, 1907.

Butter.

The dairy market is quite satisfactory in the volume of demands, and the best grade of each kind of stock gives hint of the increased request by the slightly higher figures asked. The butter business is much more steady in the trading tone, although when taken in volume both the demand and rates are the same as on the last day of last week.

California, ex per lb	2
California, firsts	2
California, seconds	23½
Packing Stock	2

Cheese.

California, Young America, fy	1
California, flats, fancy	13½
Eastern, fancy	1

Eggs and Poultry.

A material rise in egg quotations has been made during the week and the market is very firm.

Fresh Ranch Eggs	21½
Eggs, first, per doz	2
Eggs, seconds, per doz	1
Eggs, thirds	1
Hens, per doz	5.00@5.50
Hens large	5.50@6.00
Young Roosters	7.00@8.00
Old Roosters	4.00@4.50
Fryers, per doz	5.00@7.00
Broilers, per doz	3.50@4.00
Ducks, young	4.00@6.00
Geese, per pair	1.75@2.00
Turkeys, per lb	16@19
Pigeons	1.25@1.50

Live Stock.

Steers No. 1	7½@8
No. 1 Cows and Heifers	6½@7
Hogs, 80 to 200 lbs	7½
Hogs 200 to 300 lbs	7
Calves per lb	4@5
Lambs yearlings	6½
Wethers, No. 1	5½@6
Ewes, No. 1	5@5½

Potatoes

There is no material change in the potato market, although there is some uneasiness in the general tone, causesd by the broken demand at certain intervals during the trading period. No receipts of old stock came to hand and only a few of the new varieties.

Salinas Burbanks ctl	2.50@2.75
Oregon Burbanks	2.50@2.75
Rivers	1.00@1.60
New potatoes, Early Rose	2.50@2.75
New white,	2.75@3.00

Vegetables.

Asparagus	5@10
Cucumbers, per box	1.00@1.25
Corn per doz	15@25
Chili peppers green lb	20@30
Green peas per lb	3½@4
Squash per box	1.00@1.25
Peppers Green Bell	20@30
Rhubarb, per box	1.25@1.75
Tomatoes Mexican	1.00@2.00
Tomatoes California	1.00@3.00
String beans	4@6

Onions.

Onions new box	75@2.00
Onions yellow ctl	2.00@2.50
Onions white ctl	1.75@2.00
Onions, new Reds	1.90@2.00
Onions Brown Australia per lb	3@3½

Citrus Fruits.

The market for citrus fruits, while dull, gives some indications of bettering shortly.

Lemons	1.00@4.00
Navels	1.50@3.00
Seedlings	1.25@1.75
Grapefruit, seedless	1.75@3.00
Limes	4.50@5.00

Fresh Fruits.

In fresh fruits some grades are easier, while other stock is more secure in the demand and when taken in volume they average about evenly. The hot weather is quite favorable to the citrus fruit business, and while no change in the quoted rates occured, a more favorable tone was indicated by the steady trading. The watermelons and figs, which have been expected for several days past have not as yet arrived. There is but a small quantity of pears for sale, while cherry plums have been entirely eliminated. Nutmegs are in goodly abundance and were said to be of exceptionally good quality. The berry market is heavily stocked with supplies which are considered mostly first class. The raspberry market has a rather wide range of figures as the supplies at present consist of various degrees of quality.

Apples, per box	1.25@1.50
Apples, new per box	35@50
Apricots per box	75@1.15

Apricots per lb.... .....4@6
Blackberries per chest.....5.00@8.00
Currants, per box..... .....50@75
Cherries, blk.... ....75@1.25
Cherries, white per box..... ..75@.80
Cherries white loose.... .....5@7
Cherries blk loose .....8@10
Cherreis, per lb.... .....8@10
Gooseberries, per lb.... .....6@9
Logans, per chest.... .....6.00@7.00
Melons, special.. ....1.00
Melons Ponies.... ....2.00@4.00
Plums per box.... .....65@75
Peaches, per box.. .....75@1.25
Raspberries per chest.... ..10.00@12.00
Raspberries per chest.... ....5.00@7.00
Strawberries per chest.....8.00@10.00
Watermelons each..... .....50@1.00

Dried Fruits.

Apples (evap.) ..... 6½@8
Apricots, per lb new..... ....18@20
Figs, white ..... 4@5
Prunes, four sizes ..... 3@4½
Peaches ..... 10@13
Raisins, seeded (1906) ..... 3½@10
Thompson, unbleached 7½
Thompson, bleached ..... 9@11
Pears ..... 7½@12½

The f. o. b. quotations on the 1907 raisin crop, October delivery, have been announced as follows: Fancy seeded, 12-ounce cartons, 6 5-8c; Choice seeded, 16-ounce cartons, 7¾c; Choice seeded, 12-ounce cartons, 6¼c; Loose Muscatels, 3-crown, 6 3-8c; Loose Muscatels, 2-crown, 5¾c; Seedless Muscatels, standard, 5 5-8c; Seedless Sultanas, unbleached, 5¾c; Seedless Thompson's, unbleached, 6¼c; Imperial Clusters, 3-crown, $3.00; Dehesa Clusters, 5-crown, $2.50; Fancy Clusters, 4-crown, $2;London Layers, 3-crown, $1.40; London Layers, 2-crown, $1.30.

Beans, Dried

Limas, No. 1.... .....4.75@4.90
Pink .....2.30@2.50
Large White..... .....2.40@2.65
Black Eyes .....4.90@5.00
Red Kidneys .....3.50@3.75
Bayo, ...2.85@3.00

Hops.

Fancy, 11c; choice, 8@10c; prime, 7@8c;common, 5@6 per lb.

Nuts.

Almonds, new ..... 17½@18
Peanuts, California ..... 5½@6½
Walnuts ..... 12@16

Honey

Clear White Comb ..... 16@@16½
Amber ..... 12@15
Extracted ..... 5@7
Beeswax, per lb ..... 25@30

Hay.

Alfalfa, local ..... 11@13.50
Oat ..... 18@20
Wheat, No. 1 ..... 22@24
Wheat, No. 2 ..... 13@17

Grain.

Trade conditions in the local wheat market showed no change yesterday. Prices remain steady and the transactions in spot stock continue limited to actual requirements only. Considerable stock is being received from the North, and this will doubtless increase a little later. Barley remains plentiful, with prices easy, though not quoted lower. The general inquiry is good, but there is not much doing in the export line.

Wheat, No 1.... .....1.50@1.52½
Barley, No. 1.... ....1.20@1.22½
Corn, small yellow.. ..... 1.55@1.60
Corn, yellow..... ..... 1.45@1.50
Oats, White.... .....1.55@1.75
Oats, Red.... ....1.60@1.75
Bran, per ton.... .....20.00@22.00
Straw, per bale ..... .50@.70
Feed Corn Meal, per ton .. 32.50@33.50
Cracked Corn, per ton ..... 33@34
Oil Cake Meal, per ton....40.00@41.50
Cocoanut cake, per ton.....27.50@28.00

Citrus Market

LOS ANGELES, June 18,1907.

The orange market still holds remarkable strength and insists upon closing the marketable season as it has carried all the way through with encouragement to the grower.

As will be seen by the following sample of auction sales,, even there strong conditions and good prices prevail.

Lemons are still more or less indifferent and playing a waiting game on the weather.

Shipments.

Shipments to date aggregate 23,513 cars, of which 2271 are lemons. Last year this date 23,015, of which 2743 were lemons.

NEW YORK, June 17.—The market is lower but there is good demand at prevailing prices. Weather hot. Thirty-eight carloads of oranges sold.

NAVELS—
Royal Knight x f R H Ex E Hi'l'd $3.55
Lochinvar x c R H Ex E Highland 3.30
Gold Buckle x f R H Ex E Highl'd 2.95
Lochinvar x c R H Ex E Highland 2.95
Quail x c O K Ft Ex..... 2.75
Quail x c O K Ft Ex..... 2.70
Quail x c O K Ft Ex..... 2.75
Parrot x c S A Ex Pomona..... 2.40
Parrot x c S A Ft Ex Pomona.... 2.65
Cosmos, f S B Ex Yerkes..... 2.90
C S O st S B Ex Yerkes..... 2.40
Sweetheart x f High Grove Ex..... 3.60
Eagle, x c High Grove Ex..... 3.70
Golden Rule, x c Riverside Ex..... 3.05
Golden st Riverside Ex..... 2.75
Golden Rule x c Riverside Ex.... 3.35
Red Globe x c Riverside Ex..... 3.00
Humming Bird, or r Riverside Ex 2.85
Riverside, or r Riverside Ex..... 2.50
Setter, f A Ex Riverside..... 2.75
VALENCIAS—
Standard, st Riverside Ex..... 2.40
GRAPEFRUIT (Halves)—
Crocus x f S B Ex Yerkes..... 1.00
Canna, x c S B Ex Yerkes..... .75
BUDDED—
Golden st Riverside Ex..... 2.00
Golden Rule x c Riverside Ex..... 2.70
Riverside or r Riverside Ex..... 1.95
Blue Print x f Riverside Ex..... 1.95
Green Print x c Riverside Ex..... 1.40

PHILADELPHIA, June 17.—The market is very strong and the weather is warm. Twelve carloads of oranges and two carloads of lemons sold here today.

NAVELS—
Golden Rule, x c Riverside Ex....$3.10
Blue Globe x f Riverside Ex..... 3.85
Red Globe x c Riverside Ex..... 3.25
Golden Rule x c Riverside Ex..... 3.10
Challenge o r R'v's'd Ex Pachappa 2.45
Lark c O K Ft Ex..... 2.75
Owl st OK Ft Ex..... 2.40
Lochinvar x c R H Ex E H'l'nd.. 3.30
Belt st R H Ex E Highland..... 2.65
SEEDLINGS—
El Naranjal 2.60
Criterion 2.10
Newsboy 2.40
SWEETS—
Pointer 3.05
Hunter 2.35
Newsboy 2.55
BLOODS—
Pointer 2.20
BUDDED—
California Orange 2.75
Red Globe 2.95
ST. MICHAELS—
Red Globe 3.30
LEMONS—
Coyote 2.50
Harbor 2.25
Ramona 1.80
VALENCIAS—
Signal 3.85
Blue Mountain 3.30

CLEVELAND, June 17.—The market is very strong and the weather warm. Seven carloads sold today.

NAVELS—
Quail, xc O K Ft Ex.....$3.05
Golden Rule xc Riverside Ft Ex 3.35
Golden st Riverside Ex Riv..... 3.00
LEMONS—
Queen Bee xfy Q C Ex Corona.... 3.35
Royal xc Q C Ex Corona..... 3.35
O. I. C. st Q C Ex Corona..... 3.10
SEEDLINGS—
White Star xc Worthley-Strong.. 2.30
Valle Vista fy Hemet Dist.....1.80
Floral ch S B Ex Colton..... 3.65
ST. MICHAEIS—
Colombo st S T Ex Fullerton..... 3.60
SWEETS—
Golden Rule Riv Ex..... 3.40
Pansy xfy Colton O G Assn..... 2.70
G. Strand xc Colton O G Assn...2.20

BOSTON, June 17.—No sale, Bunker Hill Day.

ST. LOUIS, June 17.—The market is weak on account of condition of fruit. Weather warm. Five carloads sold today and four carloads on tracks.

NAVELS—
Hawk st S A Ex Pomona.....$2.30
California Orange st Riv Ex Riv.. 1.90
LEMONS—
Leader ch Q C Ex Corona..... 2.85
Justrite Q C Ex Corona..... 2.60
Ramona ch Chas Mohnike..... 2.50
Minerva Q C Ex Corona..... 2.40
SEEDLINGS—
Arrowhead xch S B Ex High..... 2.65
Arrowhead xc S B Ex High..... 2.65
BLOODS—
Carrier st S B Ex High..... 1.85

PITTSBURG, June 17.—The market is firm on good stock. Weather cloudy. Eleven carloads of oranges and one carload of lemons sold today.

NAVELS—
Blue Jay st O K Ft Ex $2.00
Quail xc O K Ft Ex..... 2.70
Blue Jay st O K Ft Ex..... 2.60
Blue Jay st O K Ft Ex..... 2.25
Eagle xc H G Ft Ex..... 3.35
Riverside o r Riv Ex Riv..... 2.20
Orchard o r Nat O Co..... 4.25
Standard st Nat O Co..... 3.90
Jasmine st. D M Ft Ex..... 2.85
Standard st Riv Ex Riv..... 2.10
Challenge o r Riv Ex Pachappa.. 2.35
SEEDLINGS—
Titus Ranch..... .....2.80@ 2.85
Jasmine..... .... 2.45
Our Pride.... .. .. 2.90
SWEETS—
Quail..... .... 2.45
Swallow.... .... 1.75
Blue Jay.... .... 2.20
Our Pride..... .... 2.90
LEMONS—
Blue Jay.... .... 1.95

CINCINNATI, June 17.—The market is steady and the weather is warm. Eleven carloads on tracks.

NAVELS—
Owl, st O K Ft Ex.....$2.10
Owl, st O K Ft Ex..... 2.00
Blue Print fy Riv Ex Pachappa.. 2.10
Stock Label st Riv Ex Pachappa.. 2.00
SWEETS—
Owl 2.35
LEMONS—
Duck..... .... 3.00
Dawn..... ... . 3.05

NEW YORK, June 18.—The market is very strong on good, sound, firm keeping stock and lower on soft fruit. Weather hot. Twenty-one oranges and one lemon sold.

NAVELS—	Aver.
Sweetheart xc H G Ft Ex.....	$4.30
Eagle xc H G Ft Ex.....	3.55
Quail xc O K F Ex.....	2.50
Royal Knight xc R H Ft Ex.....	4.05
Golden Rule xc Riv Ft Ex.....	3.15
Pointer xc A C G Ft Ex.....	1.75
Red Globe xc Riv Ft Ex.....	2.80
Riverside st Riv Ft Ex.....	2.55
Palm Tree ch A H Ft Ex.....	2.20
Standard st Nat O Co.....	3.45
Standard Nat O Co.....	3.35
SEEDLINGS—	
Titus Ranch xc San Mar'o G P Co	2.75
El Toreador st San Mar'o Pack Co	2.45
Golden Rule xc Riv Ft Ex.....	2.65
ST. MICHEALS—	
Pointer xc A C G Ft Ex.....	2.70
Blue Globe x fy Riv Ft Ex.....	3.20
Red Globe x c Riv Ft Ex.....	2.85
Victory, xc Cal C U.....	2.70
Rose x fy Redlands O Gr A.....	3.95
I. X. L. fy Benchley Ft Co.....3.20	

SWEETS—Solano, $2.20; Slover Mt., o r $3.00;St, $2.55; Independent, fy, $2.65; Slover Mt., o r $2.60.

BLOODS—Red Globe, $2.75; I. X. L., $3.00.

VALENCIAS—Humming Bird, $2.70; Riverside, $2.40; Carmen, $3.05; Mission Belle, $3.25; Stalk, $2.80.

LEMONS—Arbutus, $1.45; Flower, fy, $4.00; Flower, o r, $3.00; Flower, xc, $2.90; Flower, ch, $2.40.

ST. MICHAELS HALVES—Blue Globe, $1.60; Rose, $1.70.

TANGERINE HALVES — Mission Bells, $1.60.

GRAPEFRUIT—Squirrel, $3.40; Slover Mt., $2.90; I. X. L., $2.35; Crocus, halves, $1.35.

BOSTON, June 18.—The market is very strong and higher. Weather muggy. Eighteen cars sold today and twenty-one cars on tracks.

NAVELS—	Aver.
Orchard o r Nat O Co.....	$4.25
Standard st Nat O Co.....	3.40
Rose xfy Redlands O Gr A.....	3.50
Clover xc Redlands O Gr A.....	2.80
Hawarden xfy Harwarden C A..	2.50
Mt. Lion fy F H Speich & Co....	2.10
Old Baldy xyf Cal Cit U.....	1.70
Golden Rule xc Riv Ex.....	2.45
Quail xch O K Ft Ex.....	2.00
Quail xc O K Ft Ex.....	2.75
Cosmos fy S B Ex Yerkes.....	2.60
Cosmos fy S B Ex Yerkes.....	3.00

BLOODS—Rose, $3.55; Klondyke, $1.80. Halves—Rose, $2.20.

ST. MICHAELS—California Sunshine, $3.50.

SWEETS—California Sunshine, $2.-80; Ben Hur, $3.65.

GRAPEFRUIT—Independent, fy $4.-10; Independent, xch, $3.75; Mt. Lion, $1.60; Crocus, halves, $1.25.

LEMONS—Roosmoyne, $3.00.

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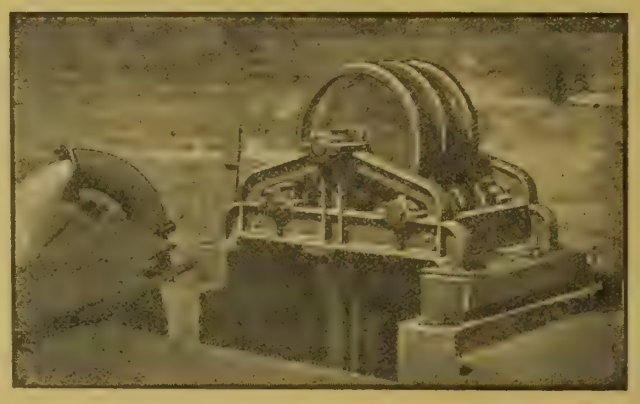

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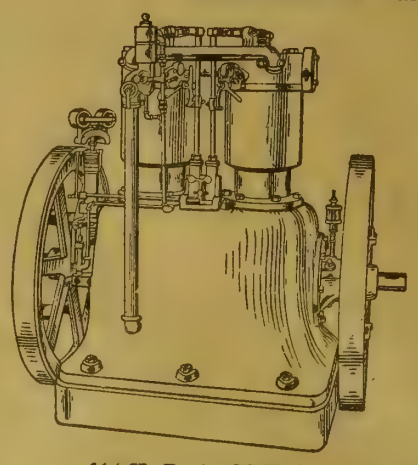

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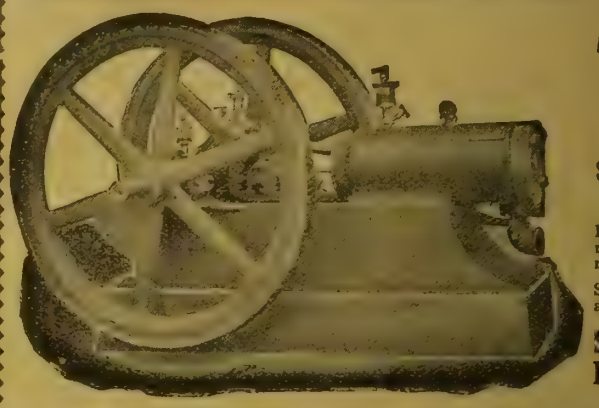

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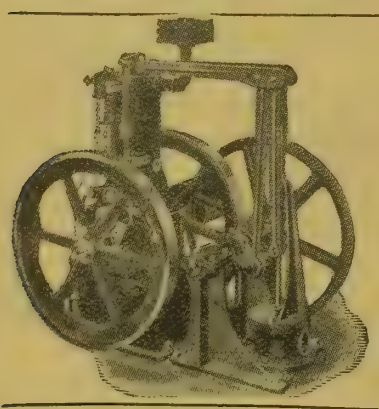

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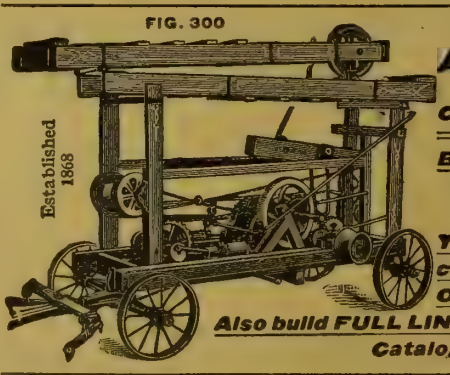

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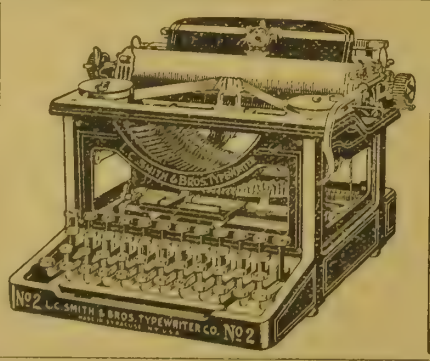

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THE holding of the Fifteenth Irrigation Congress at Sacramento in September will make that city the center of attraction to many people from every State in the Union. The crowd anticipated has impelled the people of Sacramento to canvass the residence districts to secure accommodations for all, which the committee in charge assures us will be done and all will be comfortably housed.

Committees are at work planning a great program for the sessions as well as for drives, automobile trips, parades, etc., so that pleasure as well as profit is promised.

The widely varying conditions in California make the study of irrigation of particular and peculiar interest, accordingly a very widespread interest should be aroused in California and we should all join in making it one of the most successful and interesting meetings yet held. No pains will be spared to properly entertain visitors to the meeting, and every facility of travel in the way of rates, stop-over privileges, side trips, etc., will be available, and without doubt the attendance and interest in the fifteenth session of this National Congress, which bids fair to become an international one, will be in excess of any of its predecessors.

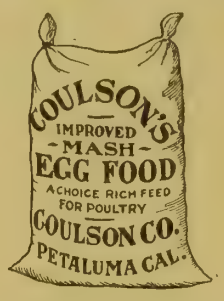
It may be of interest to have some information as to our State Capitol building which with its park of beautiful trees is the center of attraction of that city and much admired by its many visitors.

The building is 282 feet long and five stories high, including the basement. The corner stone was laid in 1860, and it was not completed until 1874. It is a splendidly built brick building, and is one of the most beautiful capitols in the United States. But it had too little room in it without being too small. Practically only three of the stories could be used; the basement being in effect a cellar, and the upper story only a fire trap attic. There was a scarcity of rooms for state offices, and none at all for committee rooms. This led the legislature of two years ago to appropriate $352,960 for a renovation of the capitol building. A year was lost in getting plans threshed out and contracts let. And the work has been going on for more than a year. The first work was to cut holes into the basement, make area walls for basement windows, take off the badly rotted wooden roof, and raise the walls, so as to make a full story of the upper story. These things have been done; the new steel roof is going on, and another year will see the work finished. The capitol has cost $2,600,000. It could not now be duplicated for $5,000,000 and probably not for $6,000,000, nor within five years of time. It can be enlarged at any time by building the wings at either end, as in the case of the capitol at Washington. The earthquake did not damage it.

Coulson's Improved Mash Egg Food

Takes Less Feed

Makes More Eggs



4 CENTS A MONTH
to feed a hen Coulson's IMPROVED Mash Egg Food Every Day Two eggs a month pays for the feed and when you get 18 to 20 eggs a month think of the money the hen earns for you

IF YOU WANT PLENTY OF EGGS THIS FALL AND WINTER when prices are high, you must lay your plans now. The hens must be given a strong feed which will enable them to get through the molt without loss of condition, and they will then quickly commence laying again.

First, see that your hens are healthy when they start to molt. At this time of the year, after a heavy laying season, they are apt not to be at their best, and a little of *Coulson's No. 3 Condition Powder* will put new life into them, and enable them to thoroughly digest and use the good food which they specially need.

At the same time, they must have the best food you can give them from the commencement of the molt. You will find *Coulson's Improved Mash Egg Food* is just what is required. It is strong in protein, due to the blood, meat, bone and oil cake meals which it contains.

Put Up in 90-lb. Sacks Directions in Each Sack

Your hens will not need to eat so much of the concentrated food to obtain the egg-making and feather-producing materials they need, thus saving their digestive organs and your pocket at the same time.

Coulson's Improved Mash Egg Food is therefore beneficial in two ways. Less feed is required and the hen gets just what she needs, with the result of a quicker molt and more eggs.

First cost is not everything, but even in this respect, COULSON'S IMPROVED MASH EGG FOOD shows to advantage. A 90-lb. sack will make a meal for 1250 hens. This is just over 2 lbs. a hen a month. Think how many eggs does it take to pay for this feed? In November, only 1 egg, and not more than 2 on the average.

We know what this feed will do by results on our own poultry ranch, as well as from testimonials from pleased customers all over California. What it does for others, it will do for you.

Give a trial order to your dealer; if he does not keep it, write to us, and we will either advise you where you can get it locally, or supply you direct.

Manufactured By

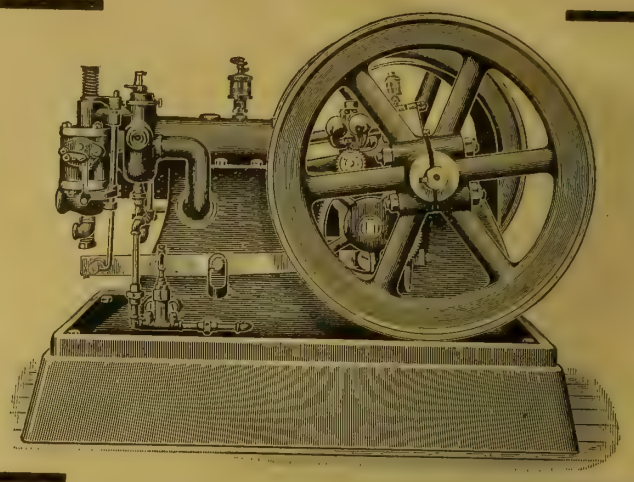
Coulson Poultry and Stock Food Co.

Petaluma, California

GERMAIN SEED CO., LOS ANGELES, CAL.

Distributing Agents for Southern California

Alamo Engines



Up-To-Date are the three words which best sum up the good qualities of theAlamo. These engines combine all the **latest improvements** in gas engine practice, and the result is an engine peculiarly adapted to Western conditions and fuel.

SEE OTHERS, BUT DON'T BUY UNTIL YOU'VE SEEN AN
"ALAMO"

We have them running at our salesroom.

SEE the Distillate Carburetor **SEE the Dynamo Ignitor**
SEE the Positive Governor

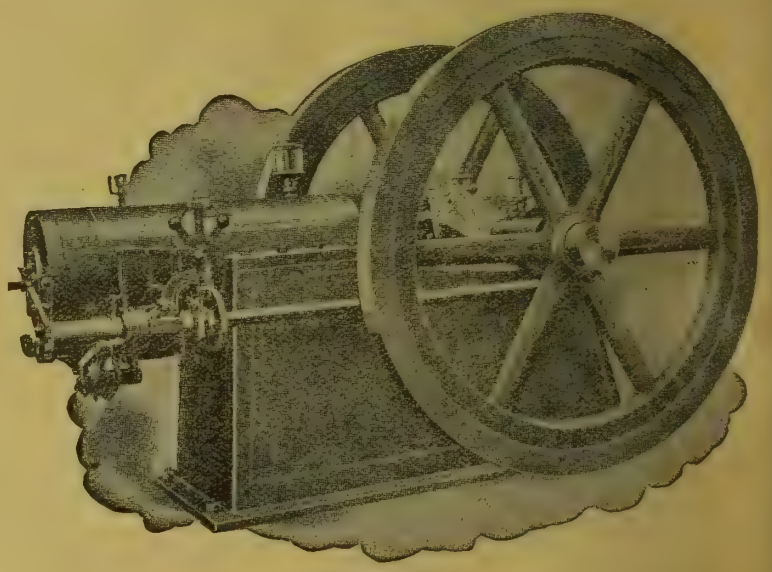
Norton Engine and Power Company
201-203 No. Los Angeles St., Los Angeles, Cal.

Columbus Engines

MADE BY THE.

Columbus Machine Co., Columbus, Ohio

Have stood the test fourteen years.



4 to 60 horse power.

Observe its cimplicity. This is a result of fourteen years labor of the largest gas-engine manufacturers in the world to produce a simple, durable and economical engine, easy to operate, no trappy devices, few working parts, backed by the strongest guarantee.

You run no Risk in Buying a Columbus Engine

There are reasons why. Best of workman and finest quality of castings is the starting point. Let us show you the rest. PUMPING PLANTS INSTALLED. Two more carloads on the road.

Greenleaf-Compton Co.

121 South Los Angeles St. ***Los Angeles Cal.***

National Wood Pipe Company

Woodward Pat. Machine Banded Pipe, Wheeler Pat. Continuous Stave Pipe, Bored Wood Water Pipe
Made from California Redwood **WOOD PIPE** Or Selected Puget Sound Yellow Pine

Puget Sound Office: Olympia, Washington — Los Angeles Office: Cor. First and Spring Sts.
San Francisco Office: 268 Market St. — Salt Lake City, Utah: 207 Dooly Block

A Booklet, "The Whole Story About Wood Pipe," mailed free upon reguest.

California Cultivator

Vol. XXVIII—NO 26 Los Angeles, California, Thursday, June 27, 1907 Subscription $1 a Year

The Greatness of the Golden State

An Article Written for Cultivator Readers by Clarence E. Edwards of the California Promotion Committee, in Which Attention is Attracted to Our Fertile Fields and Wonderful Resources

CALIFORNIA, the great State looking out through the Golden Gate upon the Orient and all the mysterious isles of the Western Sea, has but just passed the half century mark, but in that half century the wilderness has been tamed, homes have been made under skies as fair as those of famed Italy, and half a million families breathe an air equally as beatific. To the stranger to all things Californian, to one who forgets that the State's area is larger than all England and Scotland combined, it is difficult to give an adequate idea of what is here. When it is said that all New England, New York, Pennsylvania, Ohio and New Jersey, can be laid out in the giant area of mountain and plain of California, some idea can be had of the immense magnitude of the land which awaits the coming of the home-seeker.

California's Greatness.

It is difficult to talk about California without talking of big things for it is a big State, peopled with big men and women, and we take the big trees, big farms, big mountains, big valleys and big crops as a matter of natural sequence. To the stranger it is so vast, so varied that is is bewildering. Even the oldest inhabitant is unaware of all its splendid attributes and beautiful charms. No man has seen it all, and none can comprehend it all.

Far up on the top of the grim and rugged Sierras, where eternal snow lies silent under the calm of centuries, lies stored the power that means more for California's future greatness than all other forces combined. Here, where past ages look down from the fortress of Time, where Nature has been forging her gigantic storage battery against the day which should wrest its secret from the book of Fate, lies the great force which one day is to move all the machinery in the great State.

These melting snow banks furnish ever living waters, trickling down in constant streams all along the eight hundred miles of mountain chain which rims the eastern border of this wondrous land, and these streams hold within their confines latent energy sufficient to move the ponderous engines of the whole world. One little trout stream, with scarce sufficient water to float the toy boat of children at play, gives hydro-electric energy sufficient to send one of the great ocean grayhounds in faster time than ever was made. This little stream, confined in a steel tube nearly half a mile high, develops a power so great that were its force thrown against the big turbine which gathers power from Niagra Falls, it would crumble that machinery as if it were made of carboard.

These little streams are sending their energies by electric wire, over miles of hills and dale to cities and valleys of the Coast, furnishing the power which moves our street cars, our suburban trains, our mills and factories, giving light and heat in all the cities and towns from one end of the state to the other. Yet this great resource of cheap power is but in the infancy of development.

Oil Fields and Minerals.

California's oil fields are exceeded by but one other country on earth, and as development of this great resource progresses it bids fair soon to eclipse even the famous field of Baku, in Russia. Cheap fuel is now being supplied the greater portion of the civilized world, and with each succeeding month comes increased supply to meet the ever increasing demand. Combined with the cheap electric energy from mountain streams this is paving the way to make California the greatest manufacturing State in the Union, for here we have every raw material that is needed.

Water, the Source of California's Greatness

In Nature's gigantic storehouses in the hills lie every known commercial mineral product but waiting for man to dig it and transport it to where cheap natural fuel awaits to transmute it into all the varied articles called for in this, our modern day of civilization. Millions of acres of California's area are covered by the greatest virgin of forest within the borders of the Nation. Here is the newest of lumber cut from the oldest of trees. Redwood comes from the Sequoia, and the Sequoia comes from those past ages of earth when the mammoth, the cave bear and the three-toed horse roamed the dim aisles of the forest, hunted by prehistoric man. It is a tree knowing no home in other land than California, where it has withstood the cataclysms which have swept its cogeners from the face of the earth. Vast forests of pine and fir border this wonderful forest of Sequoia, forming a lumber supply that cannot be exhausted at the present rate of demolition in two hundred and fifty years.

Vast Fertile Fields.

In the great interior valley, five hundred miles

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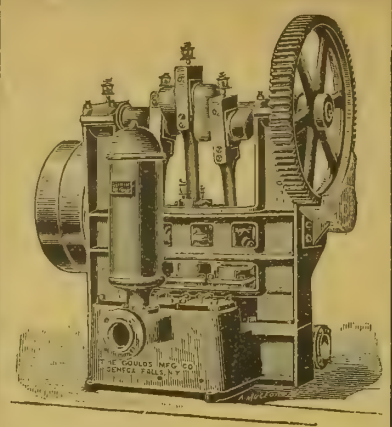

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Pumps

Are acknowledged to be of

HIGHER EFFICIENCY

than any other pumps

This means they will pump ***more*** water with ***less*** fuel than any other type.

ECONOMY OF FUEL IS MONEY SAVED

Let us send you a little booklet on the subject, ***"Let's Think About Pumps."***

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The only successful self-feed two-horse-power press made. Makes three strokes to the round. Feeder is attached direct to power, so it is bound to operate. ***Two men can run it.*** It is perfectly safe. Has a record for bailing over three tons in one hour. Satisfaction guaranteed.
John Schilling, Agent, Garvanza, Cal.

NEW ORCHARD CULTIVATOR
Every orchardist ought to know about this cultivator. A riding tool designed especially for orchard work. A favorite on the coast. Ask your dealer.
MOLINE PLOW CO., Moline, Ill.
Send 4 cents in Stamps for **Flying Dutchman Song Book**

Strawberry Plants **TROPICO BEAUTY BRANDYWINE**

$2.00 per 1,000, f. o. b.
Lots of 20,000 or more, $1.75 per 1000, f. o. b.
Lots of 100,000 or more, $1.50 per 1,000, f. o. b.
For Sale by the Grower,

D. Griswold Tropico, Cal.

GRIMSON WINTER RHUBARB

$1.50 per dozen; $6 per 100; $40 per 1000. Plant now and get returns next winter. Pedigreed plants only.
J. B. Wagner
The Rhubarb Specialist Pasadena Cal.

Burbank Crimson Winter Rhubarb

Plants and Seed for sale in any quantity. Warranted the genuine article. Orders filled promptly
A. L. Fratt, Ventura, Cal.

Cultivation, spraying, pruning, fertilizing are the four corner stones of orchard management. In which one did you fail the last season?

Deciduous Fruit Culture

BAGGING OF TABLE GRAPES.

THE Experiment Station Record gives under the above head the results of experiments made for a period of five years. The results of bagging grapes, when properly done, are extremely satisfactory.

At first, thin, transparent paper bags with the bottom removed and a V-shaped cut made in the center at the bottom were used. The results were not satisfactory as the grapes would scald during hot weather. Another style was used, the bottom being cut out and a cloth covering added over the bag. The bags had a fine copper wire encircling the bottom edge enabling it to be closed during wet or cold spells and opened again when warm. The upper part of the bag is reinforced with a pasteboard band which prevents the bags from coming in contact with the grapes. The bags were fastened to the supporting branch and not to the stems of the bunches. The arrangement formed a ball-shaped enclosure under which the grapes ripen. Over 600 bunches were treated in this way. The grapes were much larger than those in the more poorly ventilated bags.

Grapes bagged when in bloom did not drop so badly after blooming as those without bags; ripened ten days earlier and were larger.

Three different periods were selected for putting the bags over the grapes. Previous to flowering protects the bloom from cold, wet weather. Just after thinning gave the best results. Bagging just before maturity serves as protection against insects and helps to retain the bloom.

Bagging grapes is an operation which will never be done on a large scale in California, but the home collection of grapes in the city or even on the farm may be made much more valuable by this process. It eliminates the depredations of birds, gives larger and better grapes and extends the season over a longer period by treating only part of the vines in this manner. Ripening was hastened from 12 to 15 days. The process is described as being simple and inexpensive. This being the case and the fact that the grapes ripen two weeks earlier opens up a commercial possibility for the careful and painstaking horticulturist.

SUMMER PRUNING.

Now is the time when the over-methodically inclined fruit grower persuades himself to believe that he can benefit his tree by pinching back the ends of the branches and save heavy pruning in the winter. Don't do it. Anything that checks the growth of even the ends of the branches will check the growth of the entire tree. The size of the branches and the main stalk will not be so large at the end of the season as when the young growth is allowed to grow at will. It is the rapid circulation of sap that builds up the maximum amount of tissue (or wood) and that is what we all strive for in a young tree. That is what we plow, irrigate, cultivate and hope for. When the regular pruning time comes for deciduous trees, cut off the rank growth to your heart's content and you will not lose anything by it. It will only make a stronger growth, but don't go around and pinch off the fast-growing tips in the endeavor to make the tree grow symmetrical. If the bugs or worms performed that operation we would take on a lot of trouble. The young tree that gets out of shape during its summer growth will get into shape again when it gets down to a moderate yearly growth. It can be helped all that is necessary or desirable at the winter pruning time.

SUSCEPTIBILITY TO BLIGHT.

Pears are more susceptible to blight than apples, although some apples blight badly, particularly while young, says the Denver Field and Farm.

Then, again, many varieties of apples blight badly on the blossoms, even though no serious destruction to the tree occurs. The ordinary French pear stocks are, of course, seedlings, each one of which has its own individuality and different resistance to blight. The general average of French seedlings in blight resistance is low, that is, they are quite inclined to blight, particularly as many of them sprout badly.

A stock, therefore, which could be propagated by cuttings of known and tested resistance would be particularly desirable. We have this in the case of the Le Conte which is only fairly resistant to blight, but at least its resistance is known. It is propagated extensively by cuttings, as it roots quite readily in deep, sandy soils. Furthermore, these rooted cuttings are frequently budded and thus used as stocks. The Kieffer pear is also propagated in the same way, but is less commonly grown from cuttings, as it does not root so well as the Le Conte. When rooted it is rarely or never budded to other varieties in commercial nurseries. It might be a good idea to so utilize the Kieffer if it were not a little difficult to root as cuttings. It should certainly be a fine thing to use as stocks. In fact, it would be better to grow the Kieffer up to the second or third forking of the limbs and then top-work to Bartlett.

The Kieffer is not by any means wholly immune to pear blight, but it belongs to the most resistant. One of the few stocks available or already in use, of known resistance, is the Angiers quince which, of course, makes a dwarf pear. This, however, has been generally condemned for commercial planting but we have seen some excellent yard trees of Bartletts grown as dwarfs. These, however, were not originally Bartletts. They were Angouleme, or some other variety propagated on quince roots and afterwards top-worked to Bartlett.

MOTH TRAPS.

Much has been claimed for moth-traps as an aid to the fruit grower in ridding his orchard of insect pests, but Prof. W. F. Massey, of the Practical Farmer, discourages their use, saying:

"We tried, many years ago, the same arrangement that has of late been patented and extensively advertised as a trap for catching injurious insects. We found then, as almost every entomologist in the country has found, that the traps caught many more beneficial insects that it did harmful ones. At the University of Ontario the Haseltine moth-catcher was tested from June 7th to September 7th. The result was that, of the insects captured, nearly 75 per cent were of decidedly beneficial character, a considerable percentage of harmless ones and only a few harmful ones, with not a single codling moth, which the trap is especially advertised to catch. Prof. Lockhead remarks that as the maker of these traps boasts that he has sold 40,000 of them during the past season, if all of them were in operation during the season, there were probably forty million decidedly beneficial insects destroyed. The lantern moth catchers will not catch the codling moth, as has been demonstrated at every station in the country, and it will do far more harm than good. Better depend on spraying your trees, and then study insects so as to know friends from foes.

MEDIUM LOW-HEADED TREES.

I prefer trees medium low-headed, so as to have room to pick up dropped fruit. Then one can gather faster from the ground than on ladders, and I find that trees do not split and break off when heavily loaded with fruit, as they will rest on the ground or can be more easily propped than those with high tops. If they are too low the fruit does not appear to color as well as when off the ground a little distance.

The common practice in our locality is medium low-headed. I hardly think borers would do any more damage to low-headed trees than high. The flat-headed borers generally attack a tree that has some injury on it, sun-scald, rotten wood or something of that nature on the tree that is injured.

The fruit on medium low-headed trees is not damaged so much in wind storms unless it falls from the very top. As I have but little experience with high-headed trees, I cannot say which is easier to destroy caterpillars on, but since I can spray medium low trees with less difficulty, I should imagine they would be more readily destroyed on the medium low tree.—Iowa Farmer.

STIR THE SOIL.

The Cultivator recently spoke at length of the necessity of introducing air to the soil in order to allow the little beneficial bacteria to work their mission in increasing fertility. No matter how much fertilizer, expense may be incurred; unless the mechanical condition is right the elements cannot so arrange themselves as to be of value to the rootlets. Along this line Colman's Rural says: Depth and fertility being obtained, there are several other things to be considered in gardening. The soil must be worked frequently, beginning as soon after the sowing of the seeds as the young plants can be seen and saved. The frequent working of the soil not only continues it in good condition for the growing crop, but keeps ahead of the weeds.

whereby the strawberry may perpetuate its species. By means of seed and by means of runners. Restricting the efforts of the plants, put forth in this direction results in finer fruit. Some varieties of plants send out large numbers of runners while other varieties make but few.

Nature has provided two methods

Rake up all trash and burn and destroy many hibernating insects and plant diseases.

General Agriculture

USE OF POTASH.

A WELL-KNOWN agricultural journal discusses certain experiments in the use of potash salts upon the nature and quailty of barely. Inasmuch as there is a great tendency upon the Pacific Coast to change from the growth of wheat to barley, the results of these experiments in Germany will be of interest. This article may be summarized as follows:

Experiments were conducted to, determine whether it is advantageous on the more fertile soils to use Kainit and other potash salts in growing barley and to ascertain in what quantities and at what time the application should be made to be profitable.

In five tests with barley and wheat on fertile clay soils a general application of superphosphate and nitrate of soda, furnishing 220.5 pounds of phosphoric acid and 50.6 pounds of nitrogen per hectare, respectfully, was made and in addition 132 pounds of actual potash was applied. These soils range in calcium carbonate from 01.6 to 1.06 per cent. and in potash from 0.21 to 0.48 per cent. With every test the potash apparently increased the total yield, the increase amounting to 1214 pounds of grain and 1146 pounds of straw per acre. When potash was omitted the protein content of the grain increased and the starch content decreased.

A gravelly soil containing 12.40 per cent. of calcium carbonate and 0.13 per cent. of potash, producing potatoes and fertilized with barnyard manure the year before, received an application of 198 pounds of phosphoric acid, 33 pounds of nitrogen and 175 pounds of potash per acre. Applying the potassic fertilizer some time before sowing the barley proved beneficial and under these conditions Kainit was more effective. The increase in the yield of grain and straw apparently due to the potash was noteworthy.

It is pointed out that barley requires phosphoric acid, nitrogen and potash in a readily available form and in proper proportions, and that the quantities of potash given may be relatively small, if the preceeding crop was fertilized with barnyard manure; but that they should be correspondingly increased when two or three years have elapsed since the manure was applied. It is stated that barley responds best to the use of Kainit, but that on heavy soils the more concentrated potash salts are preferred.—Geo. Wright.

USE OF ALCOHOL IN FARM ENGINES.

In response to a widespread demand for information on the adaptability of alcohol as a fuel for use in internal-combustion engines used in farming operations, the office of Experiment Stations issues Bulletin No. 277. The office carried on a series of experiments with a two-fold object: (1) To determine what can be done with alcohol in existing engines and (2) to learn what changes in the mechanism of the engine are necessary to secure the highest efficiency in the use of alcohol as a fuel. The bulletin is a popular discussion of these experiments and of the mechanism and operation of gas engines in general with a short treatment of the comparative cost and relative adaptability of different fuels. The principal conclusions derived from the experiments are as follows:

"Any engine on the American market today, operating with gasoline or kerosene, can operate with alcohol fuel without any structual change whatever with proper manipulation.

"Alcohol contains approximately 0.6 of the heating value of gasoline, by weight, and in the Department's experiments a small engine required 1.8 times as much alcohol as gasoline per horse power hour. This corresponds very closely with the relative heating value of the fuels, indicating principally the same thermal efficiency with the two when vaporation is complete.

"The thermal efficiency of these engines can be improved when they are to be operated by alcohol, first, by altering the construction of the carbureter to acomplish complete vaporation and, second, by increasing the compression very materially.

"The exhaust from the alcohol engine is less likely to be offensive than the exhaust from a gasoline or kerosene engine, although there will be some odor, due to lubricating oil and imperfect combustion, if the engine is not skillfully operated.

"It requires no more skill to operate an alcohol engine than no intended for gasoline or kerosene.

"There seems to be no tendency for the interior of an alcohol engine to become sooty, as is the case with gasoline and kerosene.

"In most localities it is unlikely that alcohol power will be cheaper or as cheap as gasoline power for some time to come."

THE FARM DOG.

I belive the farm dog is as much help to the farmer's wife as to the farmer himself. Many men think there is not a place for a dog on the farm. This is true as he is generally treated. But if you have an intelligent animal he can be trained so that he will be helpful in many ways. The dog's place is primarily around the house. I do not believe he should go upon the road with a team. If he is useful he will not be in the field much of the time.

The Scotch collie is the ideal farm dog. He is intelligent and well adapted to the farm house. I have known well several of these dogs. We had one ourselves and our neighbor has one now. Both of these showed an extreme degree of intelligence. Our dog was more of a pet, although he knew in a moment when anything was wrong around the place. He never went away from home with a team, and he spent little of his time in the field. He watched the chicken yard closely, and whenever a fowl gave the warning that a hawk was in view he was up and ready to chase it away. Just as soon as he could catch sight of the bird he would begin running around under it and barking vigorously. Very few of our chickens were taken during his lifetime. If any of the stock got out of place because the fences were down or gates left open, he knew in a moment and did his best to get them back or inform us. He was very fond of the children and never showed any signs of snappishness. As a watch-dog the collie will be of great help. The farmer's wife is often left alone, both in the daytime and at night, and if she has such a guardian she feels safe.—Dairy Farmer.

A Safe Axe

Every Keen Kutter Axe is fastened to the helve by the Grellner Everlasting Lock Wedge (used only in Keen Kutter tools)—a simple device which once driven home in any tool unites head and handle so securely that only *fire* can separate them. Hence a

KEEN KUTTER

Axe cannot fly off to the annoyance and danger of the chopper.

E. C. SIMMONS KEEN KUTTER TRADE ST. LOUIS MARK U.S.A.

Look for the Keen Kutter trademark. It covers this "safe axe" and also better, truer Saws, Planes, Adzes, Hammers, Augers, Braces, Bits, Gimlets, Chisels, Gouges, Squares, Bevels, etc., than is possible to find under any other name, as well as Forks, Hoes, Rakes, Scythes, etc. If not at your dealer's, write us.

"The Recollection of Quality Remains Long After the Price is Forgotten." E. C. Simmons.
Trademark Registered.

SIMMONS HARDWARE COMPANY (Inc.),
St. Louis and New York, U. S. A.

HARVESTING DOLLARS

The harvest of dollars is on in Southern Alberta, and the man who gets in during the next few months is the man who is going to reap his share of the harvest.

If you have been watching the trend of events in Western Canada you know that land has been gradually advancing there, and you know that the people who have gone there to make their homes on Alberta's fertile acres are making more money than they ever made before.

There is a better opportunity offered right now in Southern Alberta than has ever been offered there or anywhere else before.

On the great Canadian Pacific irrigated tract, comprising 3,000,000 acres of the best land in America, is to found the opportunity of a life time.

On this tract the farmer need never fear that his crops or live stock will suffer for water. Every farm has an irrigation ditch running thrcugh it, and the water is always ready to be turned on.

There is no better soil anywhere for raising Alfalfa, Sugar Beets, Wheat, Oats, Barley, Cattle, Horses, Sheep or Hogs.

This land is located near Calgary, which is a thriving Canadian city, growing by leaps and bounds. Large grain elevators are located in every town along the line of the Canadian Pacific, and one of the largest packing houses in Canada is running full blast in Calgary. Thus the farmer has the best of markets at his very door.

It is a fine trip through Alberta and Western Canada, and we are glad to have people come and see the country, because when they come they fall in love with it and stay right here. Send us your name and address and let us tell you how to make the trip at very small cost, and how to get a piece of this fertile land at a price so low it will surprise you, and on terms so easy that any man can own a farm.

CANADIAN PACIFIC IRRIGATION COLONIZATION CO., Limited,
60 Ninth Avenue, West, - - - CALGARY, ALTA., CANADA.
Sales Department, Canadian Pacific Railway, Irrigated Lands. 9

The Perfection Acetylene Generator

Is the **Best, Cheapest, Safest,** and **Most Easily Managed Gas Machine** on the market. Allowed by all insurance companies.

Sold on **Five-Year Guarantee** as to Material, Workmanship and Operation. Have your own Gas Plant and be Independent. For printed matter, prices, etc., write

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Durable Harness

Your harness will always look well and wear well, and will give double service if treated with

EUREKA Harness Oil

Prevents rotting. Gives a glossy black finish. Makes leather soft, strong and durable.

BOSTON COACH AXLE OIL

is the best axle lubricant. Will not gum or corrode. Superior to castor oil and more economical. **Sold everywhere—all sizes.**

Made by STANDARD OIL CO.
Incorporated

MILK CANS ROB YOU

Look through a microscope at milk set to cream in pans or cans and you'll see how they rob you. You'll see the caseine—the cheese part—forming a spidery web all through the milk. You'll see this web growing thicker and thicker until it forms solid curd. How can you expect all the cream to rise through that? It can't. This

caseine web catches a third to half the cream. You stand that loss just as long as you use pans or cans for they haven't enough skimming force to take out all the cream. But, just the minute you commence using a Sharples Dairy Tubular Cream Separator, you stop that loss.

Sharples Dairy Tubular Cream Separators have 10,000 times more skimming force than pans or cans, and twice as much as any other separator. They get all the cream—get it quick—get it free from dirt and in the best condition for making Gilt Edge Butter. Caseine don't bother the Tubular. The Tubular is positively certain to greatly increase your dairy profits, so write at once for catalog I-260 and our valuable free book, "Business Dairying."

The Sharples Separator Co.
West Chester, Pa.
Toronto, Can. Chicago, Ill.

BERKSHIRE BOARS **FANCY POULTRY**
Pedigreed Registered **HOLSTEIN and JERSEY BULLS**
Reliable Family Cows
Established 1876. Take advantage of our years of experience. Correspondence solicited.
William Niles & Co.
Breeders and Exporters Thoroughbred Live Stock
Los Angeles, California

VENADERA HERD
OF REGISTERED JERSEYS

FOR SALE—RICHLY-BRED YOUNG bulls from cow having High Official Yearly Records. Also a few heifer calves of best breeding. For particulars address

GUY H. MILLER,
French Camp,
San Joaquin county, Cal.

For Sale Our Herd Bull Sargent Fox, 64833

As we have dispersed our herd, except a few heifers for home use, we are forced to offer for sale this valuable sire. We will sell him at a low price to a breeder who is in a position to give this bull a chance to make a record.

Leffingwell Rancho. Inc., Whittier, Cal

Geo. C. Roeding, Fresno, Cal., breeder of
Thoroughbred Holstein Bulls and Heifers
Thoroughbred Berkshire Boars and Sows

Thoroughbred Poland China Swine
Black Minorca and Barred Rock Poultry
High Grade Stock of Best Strains.
Young Stock For Sale.
M. Bassett - - Hanford, Cal.

When writing advertisers, mention Cultivator

Live Stock and Dairy

CALIFORNIA DAIRYING.

Continued from Last Week

THE high wages paid to the milkers makes it a matter of importance that cows should be profitable. A cow that milks ten pounds of milk is counted as one in the string of thirty the same as though she milked fifty pounds daily. It is more profitable to have the cows kept in a small field or a corral and to feed them on cut green food, than it is to have them roaming over a thousand acres of land to hunt their food. When allowed to roam over the country, they are apt to be gathered in by a cowboy, racing on his pony and yelling as he swings a long lariat over their backs; they run wildly and jamb through the gates to their hurt. This is not an imaginary picture but one that is happily disappearing. I saw it, however, only last evening as I came here on the train. It was a pitiful sight to see the poor, frightened cows trying to run.

Weed Out.

When I see the creameries dotting the State, creameries that pay their patron by the pound for butter fat, I know that this form of dairying is doomed. It does not require abstract reasoning to say ten cows; milk thirty days; returns so many dollars; divided by ten so much per cow, not enough to pay for the milking! A few cows are, therefore, discharged as unworthy servants.

The improved cows are increasing all the while for even the scrub dairyman admits that the pure breeds are desirable. As to care? That is improving rapidly. The human spirit is growing in California. Cows are well treated ,as a rule, while the money value of horses has brought about gentleness in their care and use.

An Experience.

The struggles of the early dairyman are little appreciated today. Fifteen years ago the cows that had any dairy blood or training were scarce; I bought the few I could find. Finally bought fifty-eight just from Arizona. They were cheap in price—$15 a head—but dear enough by the time they were educated. They had horns so long and sides so lean that if the horns had not been on to anchor them I believe they might have been in danger of sifting out through the slats of the car sides like sand.

We sent these cows to the lower ranch to be broken to milking. First of all their horns were clipped off and they were confined to a small corral and fed. They gradually became gentle, as they freshened the calves were removed and the cows milked. A chute long enough to hold ten cows was built, the cows driven into it from one end of a circular corral. Two heavy, movable bars were in front of each cow, two at the rear, two over her back and one under her stomach. She could not go forward or backward or lie down or jump over the top. A side slat was loosened and the milker sat down to milk; it was kick, plunge and bawl at first and only a little milk was secured. When ten cows were milked they were let out of the chute and another ten were milked, the process was repeated until the fifty-eight had been milked. One milking a day was all that was attempted. The calves were allowed to remain with the cows until eight hours before the next milking time for it took all day to milk the bunch. After six weeks twenty of these cows were well broken and could be milked when simply tied up. These were sent to the ranch and added to the herd. The remainder were milked in the chute the rest of the season. When ready to turn out as dry, only nine were refractory and were beefed. Forty-one proved to give milk enough to be profitable when well fed. The best cow of the lot made over four hundred pounds of butter one year; eleven went over three hundred and fifty. Twenty-one of them brought in nearly twenty dollars profit a year apiece; eleven cleared fifty dollars each while one made sixty dollars one year. This is what feeding did in grade stock.

Pure Breeds Better.

If those cows had been fifty-eight head of pure breds not one would have fallen under three hundred pounds of butter, some would have made it with their first calves, ten per cent would have readily made at maturity over 400 pounds a year on the same feed as the scrubs consumed. This is why pure bred cattle are profitable. They do not have to be culled out heavily. Where the means do not permit the purchase of thoroughbreds the grades of dairy stock are rapidly made and the gain from generation to generation pays well, for fully half the heifers take strongly to the best blood. The pure strain being prepotent for milk while the mixed strain is not strong for any one thing. This is the law of nature that unmixed inheritance is strongest. "We are strong when we ally ourselves with the laws of nature and weak when we disregard and disobey them."

Not only Breed but Feed.

The milk cow cannot produce in the hands of the poor feeder. Feed must supplement breed every time. New blood must be added from time to time to keep up the stamina of the herd; great care is needed in this or the step may be backward and cause a drop in the production. The breeders of registered stock are often tempted to breed too fine, forgetting that cows must have vitality, the cramped heart and lungs are not able to give a strong, good circulation to the blood. The idea that a cow is a milk-making machine is not correct in that it abuses nature, for there are never two individual cows exactly alike. Each inherits in a different way the qualities that come from ancestors. Each meet different surroundings and develops a little differently. Nature intended the cow to have milk enough to raise a calf. We have made her give quantities, often her own weight several times over in a year, or else in the beef cow we have wiped out the milking quality, so a

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fever Outfits...See O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

See us for Sanitary Milk Bottles...O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

GOMBAULT'S
CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a **HUMAN REMEDY** for **Rheumatism, Sprains, Sore Throat,** etc., it is invaluable.

Every bottle of **Caustic Balsam** sold is Warranted to give satisfaction. Price **$1.50** per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

West Coast Healing Powder

Will Cure

Saddle and Collar Galls.

Works like a charm on all kinds of cuts, burns and sores, raw, running or ulcerated.

In sifting Cans at 25 cents; By Mail if your dealer dosen't keep it.

Made By The

West Coast Stock Food Co.

818 San Fernando St. Los Angeles, Cal

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POSITIVELY HEALS

SORE SHOULDERS

SORE NECKS OR BACKS ON

HORSES AND MULES

IT HEALS THEM ANYWAY

IN HARNESS, UNDER SADDLE OR IDLE

IF NOT SOLD IN YOUR TOWN WE WILL SEND YOU

FREE SAMPLE, If you send us the name of your dealer.

Put up in 25c, 50c and $1.00 Cans

MONEY BACK IF IT FAILS

SECURITY REMEDY CO.
MINNEAPOLIS MINN.

FOR BARB WIRE & ALL CUTS USE

SECURITY ANTISEPTIC HEALER

VACCINATE NOW
and Prevent
Anthrax or Charbon
With
PASTEUR'S ANTHRAX VACCINE
(Discovered by Louis Pasteur in 1881)

Beware of Dangerous Imitations

Insist on the Genuine bearing this Trade Mark

Absolutely Safe **Always Reliable**

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Our Rat Virus is the only scientific non-poisonous rodent exterminator.

Live Oaks Farm

Frank A. Meacham, Proprietor.

Importer and breeder of RED POLLED CATTLE, SHROPSHIRE SHEEP, RAMBOUILLET SHEEP, HORNLESS AMERICAN MERINO SHEEP. Both sexes for sale. Take electric car at Petaluma or Santa Rosa for LIVE OAKS STATION. Address all mail to

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LUGO HERD

PEABODY WALL CO., COMPTON, CAL

Thoroughbred Jersey Cattle
Berkshire Swine
Young Stock For Sale
Santa Ana Car to Lugo.

The Whiting Jersey Stock Farm Company

Is making the very best strains of blood from the island of Jersey a specialty.

Whiting Jersey Stock Farm Co., Heber, San Diego Co., Cal.

John Lynch Breeder of Registered **Shorthorns**

MILK STRAIN

P. O. Box 321 - Petaluma, Cal

foster mother has to be used to raise the calves.

Don't Breed Too Fine.

After the cow had raised her calf nature's way was for her to rest and regain her vitality. Now we must feed the cow so that she does not expend useless energy in having to hunt for feed and we must make the surroundings healthy, peaceful and restful and do everything we can to encourage the cow to be vigorous and strong. Under the forced conditions of production a cow needs training from her birth fitting her for the future; she needs a protein diet and one that is bulky, so as to have a digestion that will be strong and not put on her back the fat from the feed. The sire at the head of the herd should not be used whose dam is poorly balanced cow. See also that she has a good udder, for that too is transmitted.

With weakened vitality the cows are easily chilled and then the tiny lurking bacilli of tuberculosis may take an active hold on the cow and their deadly work be well advanced before it is discovered. When we advance too rapidly toward greater production in either milk or butter fat we do it at the expense of strength, the types grow finer; when we introduce greater virility the cow grows coarser and the production of butter fat falls.

SHEEP NOTES.

Common powdered bluestone is the best remedy for navel ill.

It costs more to keep vermin-stricken sheep than clean, healthy sheep.

It is much better to use for breeding, animals of average size, smooth, and vigorous.

Teach the ram to lead; it makes him tractable and manageable.

A mixture of lard and turpentine is a good remedy for caked udder.

Good blood counts for little where good feeding is not in evidence.

There is a limit to the digestive powers of sheep; hence, feed carefully.

Buy a registered ram this year; the grade is not good enough for you.

Sheep are good "weeders," but they appreciate and pay for good pasture.

Don't forget that sheep will suffer thirst rather than drink out of filthy vessels.

Regulate the dose of medicine according to the age and constitution of the patient.

One dram of powdered ginger and one dram of laudanum is a splendid remedy for colic.

There are a few farms these days on which sheep can not be kept with a certainty of profit.

Success attends only the breeder who takes the utmost pains in selecting his breeding stock.

Don't market the sheep before they are marketable; whether breeding stock or butcher stock .

It is not policy to put a new purchase with the flock, at once as it might be the means of introducing disease.

You can't always judge a ram by his looks. Some of the best looking rams are often useless in the stud.

A cross-bred ram, no matter of how good conformation, can never be a proper substitute for a pure-bred.

Cream Separators, all sizes, all prices. O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

Weaning time is a trying time for both dam and offspring, hence they should receive extra care at that time.

Experienced sheperds say that sore teats and sore udders are often traceable to rations of a too nitrogenous nature.

Chalk and charcoal are useful remedies for lamb suffering from acidity and such like irregularities of the stomach.

It is always discouraging to be constantly raising inferior animals for which a less price must be taken than others receive for stock which cost no more to raise.

PLANS FOR NATIONAL DAIRY SHOW.

The Executive Committee has decided to locate the next meeting of the National Dairy Show (October 10 to 19) in the famous International Live Stock Exposition building, at the Union Stock Yards, Chicago.

The building is 600 by 310 feet, and there will be 30,000 square feet devoted to exhibits of all kinds of modern appliances and improved machinery used in the dairy, on the farm, in creameries, milk plants and ice cream factories, etc. Among the many interesting exhibits, there will be working dairies, sanitary milk plants and educational exhibits made by the U. S. Department of Agriculture and the National Association of Dairy Instructors and Investigators.

This building has an ampitheater that will comfortably seat 10,000 people. In full view of the ampitheater is an arena or show ring where the herds of thoroughbred dairy cows will be exhibited. The breeds represented will be Jerseys, Holsteins, Guernseys, Ayrshires and Brown Swiss, and there will be at least 500 of the record breakers.

There will be $10,000 awarded in cash prizes, medals, cups and diplomas to exhibitors of dairy cattle and makers of creamery and dairy butter and cheese. A very interesting part of the programme will be judging contests for dairy school students, who will compete with each other in judging dairy cattle and dairy products. Special prizes and medals and diplomas will be given to exhibitors of market milk and cream.

E. Sudendorf of Chicago is Secretary of the show.

The numerous applications for stalls and pens in the live stock department of the State Fair so early in the season, leads Secretary Filcher to believe that when the curtain rises on the opening day it will reveal the finest aggregation of blooded stock ever brought together in California. Quite a number of breeders have signified their intention of showing their stock this year who have never heretofore exhibited at the State Fair, including several from South of the Tehachapi. The services of Prof. W. L. Carlyle of Denver, who gave such eminent satisfaction in California a few years ago, have been secured to act as chief judge in this department and to lecture each day on the points of excellence on different breeds of animals.

A COW OF PARTS.

One of our exchanges advertises a cow for sale as follows: "Full-blooded cow for sale, giving milk, three tons of hay, a lot of chickens and several stoves."

Veterinary Instruments, Black Leg and Anthrax Cure, Milk Fever Outfits. See O. J. Weber Co., 555-557 S. Los Angeles street, Los Angeles.

MILK COOLERS

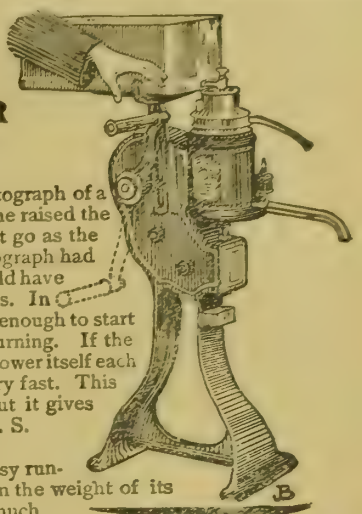
It is getting **hot;** you need a **cooler.** Write us for prices. Cream Separators, Simplex Combined Churns, Pasteurizers, Ripeners, Engines and Boilers. We supply everything used in a Dairy, Creamery or Cheese Factory.

Simplex Cream Separators

O. J. WEBER CO.

Manufacturers and Importers of
Machinery and Appliances for Dairy and Creamery
555-557 So. Los Angeles St. Los Angeles, Cal.
Phone Sunset Broadway 5006 Home 3627

How the U.S. CREAM SEPARATOR Starts Itself



At the right is an exact copy of a photograph of a number 7 U. S. Cream Separator. Someone raised the crank to the height shown and had just let go as the photograph was taken. Now if another photograph had been taken about a minute later the crank would have been in the position shown by the dotted lines. In other words, the slight **weight** of the crank is enough to start the gears and bowl of the U. S. Separator turning. If the crank was raised enough times and allowed to lower itself each time it would get the gears and bowl going very fast. This would take some time so it is not practical, but it gives you an idea of how lightly and easily the U. S. Separator runs.

Other separators are **advertised** as "easy running" but the U. S. **is** easy running. When the weight of its crank will run a U. S. it certainly can't take much power on the part of the operator to do it.

We have n't room here to tell you more about the U. S. Separator, but if you want we'll be glad to mail you **free** a copy of our big, interesting, new separator catalogue. It tells **all** about the U. S. Just say, "Send catalogue number **C 20**". Write it on a postal if it's handiest, and address

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

Prompt deliveries of U. S. Separators from warehouses at Auburn, Me., Buffalo, N. Y., Toledo, O., Chicago, Ill., LaCrosse, Wis., Minneapolis, Minn., Sioux City, Ia., Kansas City, Mo., Omaha, Neb., San Francisco, Cal., Portland, Ore., Sherbrooke and Montreal, Que., Hamilton, Ont., Winnipeg, Man. and Calgary, Alta.

Address all letters to Bellows Falls, Vt. 441

Prompt Delivery Assured California Customers from San Francisco warehouse No delays. Address all letters to Bellows Falls, Vt

Milk Cooler and Aerator

The hot weather is coming and you must have a cooler. The

Perfection Milk Cooler and Aerator

is simply perfect, and perfectly simple. Nothing quite so good. The cost of running machine is a mere nothing. We make it large enough to accommodate a dairy of 60 cows. For full particulars address

Stephenson & Tharp
Patentees and Manufacturers
851 W. 5th St. ***Riverside, Cal.***

A
DE LAVAL
SEPARATOR

will enable you to get the greatest results from your cows. A 20TH CENTURY BABCOCK TESTER and an IDEAL MILK SCALE will indicate just what each cow is doing, and inform you what returns you should receive from the creamery. Some cows are profitable, others are not. Get rid of the poor ones and buy good ones. Ask for catalogues A and B.

De Laval Dairy Supply Co.
GENERAL OFFICES:
Drumm and Sacramento Sts., S. F.
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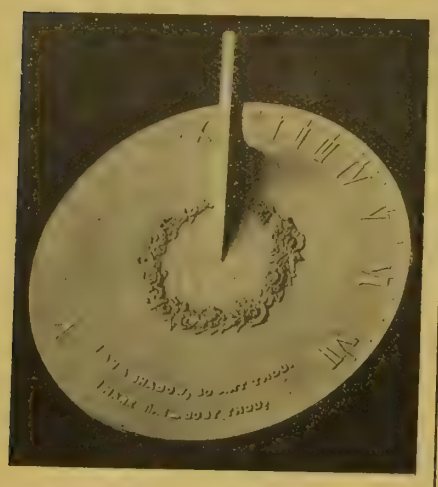
WITH A SEIVERT OIL BURNER

You can burn 100,000 feet of air with every 130 gallons of oil; this means perfect combustion. To burn more than 100,000 cubic feet of air with 130 gallons of oil, there is a decided loss of heat. To burn less than 100,000 cubic feet of air there is a loss of fuel. The only safe and reliable burner on the market. Send for full particulars.

SIEVERT OIL BURNER CO. 1001 No. Alameda St., Cor. Main and Ord Sts., Los Angeles, Cal.

Sun Dials



In laying out your grounds to beautify your home, have you reserved a place for a Sun Dial? If you have not, than spend a few moments in your grounds and see how incomplete they are without a beautiful Sun Dial, with jasmine, ivy or smilax twined around its pedestal. I make these Dials of Bronze to your order, any size and inscription to suit you. Deliver them set up and guarantee correct time. No grounds complete without one. Write for prices with or without pedestal.

W. A. SEYMOUR
470 N. Beaudry Ave., Los Angeles, Cal.

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Be economical.
True economy avoids all waste and extravagance, and applies money to the best advantage.
A Savings Account is an aid to economy.
The complete facilities of this Bank are at your service.
Four per cent interest on Deposits.

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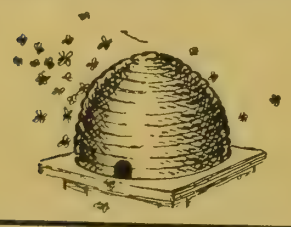

Vulcanite Roofing

Just the thing all the year around

Non-conductive of heat and cold. Does not buckle—lays perfectly smooth. A material which is at once light, strong, durable and cheap, and at the same time water-proof, wind-proof, acid and fume-proof. Also used for covering outsides of buildings, floors of warehouses, offices, etc. Requires no paint; is permanent and inexpensive.

Comes in various weights. Samples and price list upon application. Asphaltum and Roofing Materials of all kinds. C & S Roof Paint for sale.

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714-16-18 East 3rd Street
Los Angeles, Cal.

BALFOUR, GUTHRIE & CO.
IMPORTERS OF
THOMAS PHOSPHATE POWDER
AND
NITRATE OF SODA
San Francisco Fresno Los Angeles
WRITE FOR PAMPHLET AND PRICES

The Ornamental Garden

SOME RAMBLES REAL AND FANCIFUL.

MORE than once the question has come to me from plant lovers: Does not the study of botany tend to tarnish the keenness of an artistic appreciation of flowers? Does not the mind pass on with a diminished notice to the mere points for classification? Certainly one might arrive at such a conclusion from the tedious reports of the study and experiments of cell development and structure which now seems to be engaging the attention of the botanists of the day that are most heard of. Their efforts are no doubt as worthy as they are energetic, but they represent a special line of research and only a small part of what is still botany to those who enjoyed the science as it was in the days of Asa Gray and Alphonso Wood. The modern method of teaching botany is a distinct failure unless it is desired merely to make specialists. The science of classifying plants is termed taxomony, and until very recently was the branch first presented to the learner who thereby at once acquired some knowledge of the plants he studied from the outward form and appearance of their different organs. Let no fear of a blunting of the artistic feeling prevent anyone from entering upon the study of botany at this portal. Can anything be less graceful or less beautiful for being more interesting? But it is not interest alone that we encounter at every step. First the unaided eye by reason of closer observation notes beauties hitherto undetected; then with a simple magnifiying glass, which should be as common as a pocket knife, a new world is presented—a charming fairy world of soft and bright and glowing colors and graceful wonderful designs unmatched by the most exquisite jewels. The eye that delighted in a mass of color and asked only that it be harmonious in its blending, now seeks grace and form and finds them where they did not exist before.

An extreme instance is that of a common dooryard weed heedlessly trodden upon with perhaps no motive at all. I refer to what is known as knot-weed or joint-weed, a rather friendly and not distressing little weed, which like the common plantain is said to follow the footsteps of the white man. Botanists know it as polygonum aviculare. Many people never see the flower on this plant, yet there are many on a single specimen, and under an ordinary lens they are not unlike tiny lilies. Those who know the smartweed will know what the flower is like, as that is a Polygonum also, but in the knotweed the flowers are almost hidden in the angles of the leaves.

A less marked instance is our mountain form of alfileria. Have you ever examined at all minutely this little wild geranium, or more correctly, storks-bill? Graceful, delicately cut leaves, pretty dainty petals, the column which bears the seeds being turned on its stem in such a way as to readily suggest the neck and head of a stork. California children all know this plant as "clocks," and their habit of sticking the seed in their clothing and watching the long, hairy tail slowly wind around like the hands of a clock, winding as it dries and unwinding as it is moistened, is an interesting experiment which demonstrates the manner in which the seed plants itself. This little plant has many beauties and were it not so common would undoubtedly be prized in garden collections.

It would be a pleasing but almost endless task to dilate on the many ways in which the intimate study of plants adds to their beauty and interest.

May Smiley Heights, while different is not less beautiful than April Smiley Heights. The glory of the Acacias is past, but the Deodars, Cypresses, Pines and Firs seem especially prepared to receive visitors. Their soft blue and gray greens give a peaceful soothing effect to the landscape. The Acacias have forgotten the fatigue of blooming and have the air of getting ready for the summer outing after the season.

Along the ridge at the southwest of Cañon Crest Park, the gaillardias are seen to their best advantage. When in sole possession and well but not over massed, they command admiration of their imperial colors and stateliness.

Spirea still pleases the eye. The classical myrtle, Myrtus Communis, is about to unfold its profusion of little white stars. The Hypericum or St. James Wort, a shrubby species, is displaying its flowers of a peculiarly rich yellow that seems somewhat different from all other yellows. The English Privet—the best of hedge plants, is displaying pyramidal panicles of white flowers looking very much like Spirea Japonica. Two yellow Brooms are noticeabe, both of which are occasionally confused with the Scotch Broom. The commonest one is probably Canariensis or the Canary Island Broom. The other, which is almost leafless and bears, large yellow and intensely fragrant flowers, is known as Spanish Broom (Sparium Junceum). A small shrub of this species has become established just below the top of the crest on the northern slope facing the San Timoteo Cañon. To the practised eye it is startling to see this blossom where all else is wild. It, however, blends well with the native flora, as the hillside is covered with the beautiful, golden, sunflower-like plant called Encelia farinosa. One of the handsome bottle brushes Callistemon rigidum is in full bloom and the display of variegated aloes is extremely interesting and striking.

One of the effects which is especially worthy of admiration is the varied and graceful sky-line produced by the tall gum trees.—Louis A. Greata in Redlands Citrograph.

A GOOD TIME TO HELP.

Mrs. W—— went shopping one afternoon, and little George, taking advantage of her absence, committed many misdeeds, says the Chicago Tribune, On being told later of his misbehavior she promised the little truant a whipping.

Evidently pondering over the punishment which was to visit his bad conduct, never once did the guilty boy raise his head during the entire supper, but when the meal was finished he immediately stole up to bed.

His mother walked softly behind. Kneeling at the bedside his little hands joined and the little face turned up, she heard the boy's prayer: "O God, mamma says you like little children. If you want to help a little boy now is a good time."

Both God and mamma heard the prayer, and George's request was granted.

TOO FUNNY.

"Mary," said a lady to her cook, "I must insist that you keep better hours, and that you have less company in the kitchen at night. Last night you kept me from sleeping because of the uproarious laughter of one of your women friends."

"Yis, mum, I know," was the reply; "but she couldn't help it. I was tellin' her how you tried to make cake one day."

Pasadena, Cal., May 22, 1906.
West Coast Stock Food Co.
818 San Fernando St.,
Los Angeles

Gentlemen: — I take great pleasure in recommending to gardeners your

KILLAMITE

I found it sure death to all plant insects without injury to the plants. I also use it in my poultry yards and know its use among poultry cannot be beaten.

Yours truly,
FRED ESTERWOLD,
Public Gardener and Breeder of Prize Winning Buff Rocks.

In sifting cans, 25c and 50c by mail, if your dealer doesn't keep it. For spraying in and about the poultry house **West Coast Lice Killer** can't be beaten.

ROSES

ROSES

Plant Now
Strong, Field-Grown Roses
56 Varieties
To Select From. ***Price, $2.50 to $3.50 per Dozen,*** according to size. Write for List—it's free.

Theodore Payne
Seedsman and Nurseryman
345 S. Main St., Los Angeles, Cal.

"GOPHER DEATH"
Kills Gophers, Squirrels, rodents 1600 tablets in a box. 1 tablet kills a gopher, Price $1.25.
"RATICIDE"
Kills Rats and Mice. Price 25c. Ask your druggist for either, or send price, and we will forward free of charge. Send for sample or circular. ***Fort Dodge Chemical Company,*** 230 Monadnock Building, San Francisco

Your Eastern Trip

SOUTHERN PACIFIC

May be arranged so that you may travel by way of

New Orleans and the Sunset Route
San Francisco and the Ogden Route
Portland and the Shasta Route

Enjoying the balmy air of the South or the cool and bracing air of the North.

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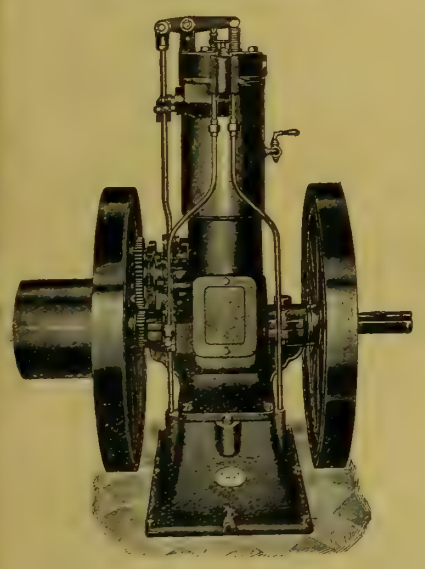

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The Vegetable Garden

LIMA BEANS.

In view of the fact that many early vegetables have not been much of a success this season a greater interest is likely to be manifested in those which will do their best in warm weather. Among these are Lima beans, and a writer in the American Cultivator gives a good account of the different varieties, saying:

In the south, Lima beans are among the more popular varieties, but in the north, many have regarded the season too short for the Lima to properly ripen. This was especially true before the introduction of the bush Limas, in 1890. True, in many favored sections the pole Lima would mature—but just as frequently it wouldn't.

With the introduction of Burpee's bush Lima, a bean fully the equal in every way of the large pole Lima was made available. In a rich soil the bush bean is quite prolific, needs no poling or support, and being in a circular bush form, is a pleasing sight. The bean of the Burpee bush Lima is a reproduction of the well-known pole Lima. The large pods contain three to five large beans.

Dreer's bush Lima requires several days more time to mature than Burpee's. The Dreer Lima has a shorter and thicker pod than Burpee's—in fact, is creased at the edges. The beans are thick, short and three or four closely packed in the pod. Dreer's Lima is inclined to be more spreading and less upright than the Burpee sort.

Henderson's bush Lima is a delicious little Lima, the smallest of them all. It is the very early Sieva, or butter bean, raised quite extensively in the south. The plants are very productive on rich soil. There are usually three or four beans in a pod. But few if any variety of beans surpasses Henderson's bush Lima as an entire or side dish. They are superb.

These three bush Lima beans, Burpee's, Dreer's and Henderson's are each similar, in being of upright bush form, require no poles, and are extremely easy of cultivation. But the beans of each variety, are of vastly different size.

While these bush Limas have been on the market but a few years, yet experts have continued to improve them. More recently, Burpee's Quarter Century strain of Burpee's bush Lima was brought out; also Dreer's Wonder strain of Burpee's bush Lima. The improvements aimed at in these strains were to keep the pods nearer the center of the plant, thus strengthening the bush, and also its prolificacy.

WATERCRESS.

This delicious little salad plant is a great appetizer and furnishes cuttings for table use very early in the season, says Coleman's Rural World. It should be more universally grown for home use than it now is. Those who are convenient to city markets have no trouble in disposing of all they can grow. The best place to grow this plant is in a spring or brook, for it must have plenty of water. As to the trouble which may ensue from sowing the seed where the spreading of the plants cannot be controlled a writer in an exchange thus cites his experience:

"We are often recommended to plant watercress in our brooks and ditches, but my experience is against this practice. I put a single spray of water cress in the muddy bank of a ditch running through the farm. In a few years the entire ditch, one-fourth of a mile long, was so entirely filled with the growth of watercress, which was sometimes two or three feet high in the ditch, as to block the ditch and prevent the water from flowing. Watercress has also taken possession of a running brook through another of our farms to such an extent as to be a serious pest. Several times a year we send men to clear out this ditch and brook in order to allow the water to flow more freely, but in a short space of time the watercress again takes possession. Our flocks of ducks delight to feed upon this watercress, but they have never been able to keep it within bounds and prevent its being a nuisance.

A WOMAN'S WAY IN THE GARDEN.

In June plant two hills of everbearing cucumbers for summer and fall and get a small dead tree, plant it deep in a barrow load of manure. Cover this pile with four inches of earth and plant around your tree Japanese climbing cucumbers. When the tendrils are long enough train them up the limbs of the tree and the result will be amusing to the eye, and fruit pleasing to the palate.

Plant sugar pie pumpkins in some bit of ground away from the cucumbers. This variety is the best ever known for pies. It is sweet, fine in flesh, small in size, and will last over winter until April. Last year I raised over four dozen. We sold some; gave some away and had our last pumpkin pie on April 9th.

Late tomatoes may yet be planted. If you have the earth well enriched and keep the ground well cultivated above the plants they will keep right on growing.

A stringless variety of snap-beans should be planted. These can be sowed every two weeks until the first week in August and this last sowing will be just ripe in time for the fall picking. The stringless variety makes the finest pickles. They are plump and tender.

The weeds are getting in good time now and unless checked and destroyed when small they will get beyond us. I find the wheel-hoe most excellent in destroying them. If the ground between rows is stirred up every day or so with the hoe, it will be an easy matter to keep the garden looking neat and attractive.

Hoe your beans when the leaves are dry, otherwise they will rust. While, again, no time is better for hoeing lettuce than after a shower of rain and a wheel-hoe run between the rows or hills of corn seems to make the plants grow before one's eyes.—Julie Adams in American Farm World.

A writer in the Garden Magazine says: "When you buy plants of tomatoes, egg plants or peppers at the corner grocery, the chances are that no name will be attached. You can never make any progress in gardening unless you start with named varieties. Even if the grocer offers named varieties you cannot be sure that they are truly named. And even if they are truly named, you have no assurance that the plants are the product of high-bred stock."

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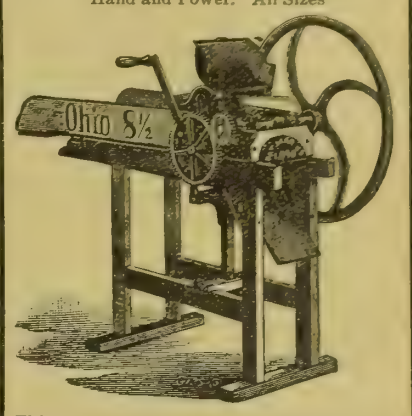

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Mail us a card asking for it today.

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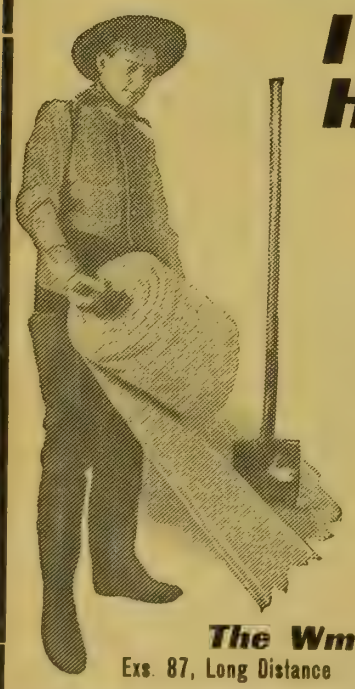

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6 inch.....	7c "
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California Horticulturally

A PROSPEROUS FRUIT SEASON.

IN SPITE of the early predictions to the effect that the deciduous fruit crop would be a total failure, the shipments so far have been unusually heavy and the prospects are that the total shipments for the season will foot up over 7000 cars. Among the more important crops this year are Bartlett pears which, in spite of the blight, are giving a good crop, much lighter of course than would have been had there been no blight. Apricots, too, are somewhat of a surprise and shipments of this fruit will be heavier than they were last season. Peaches are proving a very fair crop in most sections, but what pleases the growers most is the fact that prices for all classes of fruit are unprecedentedly high this year, and all those who have fruit for sale will have good bank accounts at the end of the season.

TOBACCO IN CALIFORNIA

Very many attempts have been made to grow tobacco in California but so far none of these attempts have been marked as commercially successful. Nearly every county has made a trial and so far none have succeeded in producing a marketable article. Why this should be so we cannot tell as it would certainly seem that in California with its great diversity of soils and climate, there should be some section in which good commercial tobacco can be grown at a profit. Mr. C. N. Ercaubrac, now of Santa Barbara, who has had as wide an experience in tobacco culture as anyone, having spent his whole life in the work, and in different tobacco sections, is willing to make a thorough and satisfactory trial of tobacco growing if he can be assured the necessary encouragement. Mr. Ercaubrack is an expert, in growing, curing and handling tobacco, and he expresses his belief that it can be successfully grown in California and made a source of great profit, if proper seed be sown and proper methods of cultivation followed. The trial is worth making for good tobacco land is worth more than any other kind.

TREATMENT FOR MORNING GLORY.

One of the worst pests in many of the orchards and fields of Northern California is the morning glory. In many cases it has taken possession of whole fields which have been abandoned to it, and even Chinamen have given it up. But even this pest can be eradicated with labor, constant and intelligent. All plants breathe through their leaves, and if these are constantly removed, or not allowed to grow, the plant will necessarily die. It is here that the remedy for morning glory is to be found. Do not allow it to come above the surface, and if it is so checked, it will in time give up the struggle for existence. The morning glory is perhaps the most persistent of all our vegetable pests, and should not be allowed to get a roothold in any field. Where it has appeared, however, it may be overcome by constant application of the weed cutter and every portion of it should be cut off below the ground. If this is done during the hot weather, and no water applied after cutting, until the tops have dried up a few applications will kill it out.

ENCOURAGING TO BEET GROWERS.

A very serious beet pest has been reported from Europe in the form of a nematode worm, a similar form to that which causes root knot on trees, and which is very destructive to them as many of our orchardists know to their sorrow. Dr. Earnest A. Beassey, pathologist in charge of the sub-tropical laboratory, U. S. Department of Agriculture at Miami, Florida, has been lately making a thorough investigation of the beet fields of the State with a view to discovering this or kindred pests, and he informed the writer that he has been unable to find any trace of it and is convinced that it does not exist in our beet fields which appear to be free from any pests of this nature.

DISTRIBUTING PARASITES.

The State Insectary for Beneficial Insects is now established in San Francisco, at the Ferry building, and beneficial insects are now being sent out on application from that point. The Comys fusca, the parasite of the Brown apricot scale has been very much in demand this season and large quantities of this insect have been sent to infested orchards. The parasite of the codling moth is now breeding out and all applications for this insect are being filled. The present is the height of the insect season and those who desire beneficial insects should secure them while they are plentiful.

THE STATE FAIR.

It is gratifying to record that more than usual interest is being taken in the State fair this year by our agricultural classes than in many years past. Mr. Filcher states that he will have representation from most of the counties and that the agricultural and horticultural interests will be fully represented.

MAKE READY FOR HARVEST.

It is money in the pocket of farmers to buy the best machines that can be had. Particularly is this true with machines that concern the hay and grain harvest. This naturally calls to mind the Champion, Deering, McCormick, Milwaukee, Osborne and Plano binders manufactured by the International Harvester Company. There are a half dozen machines from which to choose. You may be urged to buy one or another, according to the local agent you may happen to deal with.

They have all been on trial many years. All have been improved whereever improvement has been shown by experience to be possible. The International machines afford a good guarantee, perhaps the best guarantee to be had, that your busy harvest work will go on uninterruptedly, and that you will get all the grain, with little annoyance, and with the saving of all unnecessary work possible both for man and team.

International agents are to be found almost everywhere. That is an important consideration, particularly when you take into consideration the necessary repairs, which are matters that frequently require most urgent haste, and which the local dealers make it their business to look after.

If you are not fully prepared for the coming harvest, look up one or more of the local International agents in your town, get the catalogues, make a study of them and then talk to the agents about the machines you will need. The agents will have the machines on hand to speak for themselves, and they will be able to answer all your questions.

With the Citrus Growers

INFLUENCE OF CLIMATE ON SETTING OF ORANGES.

IN DISCUSSING the setting of this season's orange crop a few days ago, a Riverside grower advanced the theory that in sections where there is a constant or nearly constant wind blowing during the season of blooming the oranges do not set well. The chilly wind destroys their vitality to such an extent that only the more vigorous blossoms will set fruit. On this ground he had little faith in the future of orange growing in the desert regions now coming into cultivation. There are several experimental plantations on the Colorado desert but none of these are sufficiently far advanced to demonstrate bearing qualities.

The theory is not entirely substantiated, we think, from the fact that in former years there was no complaint on account of dropping but on the contrary there was much trouble from over-bearing and the demand for tree props was so great that all sorts of patent devices for propping over-loaded orange trees were sold by the hundreds of thousands. These have been in storage for a number of years but the records do not show that there is any appreciable change in the weather conditions then and now.

On the other hand, certain sections in the northern citrus belt where the weather conditions are ideal during the blooming period, the setting of young oranges has been heavy. This is perhaps only partial evidence and no doubt is no evidence at all, as the fact stated above that formerly in Southern California oranges set heavy while now the opposite is the case, except in some instances. In many of these exceptions, heavy fertilization has been continually practiced.

There is every indication that the bearing of the orange grove is under the control of the grower except in cases where there is some physical trouble with the trees or soil. These may and may not be overcome, but failure to set a crop of oranges cannot be laid entirely to wind, for there are hundreds of cases where full crops are grown almost continually and groves in the same vicinity are very seldom with a full crop. A great deal of the evidence seems to demonstrate that the orange crop is dependent on proper fertilization through the soil, and proper soil condition.

ORANGE TREES ON THE DESERT.

There are few "home orchards" being planted on the desert farms that have not a few orange and lemon trees, but many mistakes are being made in their culture and as a consequence there are few healthy looking trees. The soil is proverbially rich, and with this distinction it is deemed a waste of time by many to apply fertilizers. It may appear so with some trees but not with the orange and lemon. It has been our lot to inspect some twenty or more "home orchards" on the desert and in every case but three, the citrus trees were yellow and unhealthy. In these three cases stable manure had been applied and in one instance where the trees made the largest growth and were the richest green in color, manure had been placed in trenches around the trees.

In another instance nitrate of soda had been applied, one pound per tree, one year old. They were in excellent condition and were beginning to bear in the second year as were the stable manured trees.

The question of "bringing out" sickly orange trees in this region was the easiest thing we had to answer. The farmer in the desert country need not spend any money on nitrate of soda. Wherever barnyard manure has been used, the effect is most striking.

There is an unlimited supply of this material there as can be seen by the tens of thousands of heads of cattle and horses scattered over the country. There is considerable complaint in the Imperial valley about getting well rotted manure. It takes but a few hours for fresh manure to dry out and it dries as fast as it is piled up, and when cultivated into the soil it sometimes heats and is at best slow to become incorporated with the soil. This difficulty could be easily overcome by making a shallow pit into which water could be turned every few days. Owing to the absence of wells, windmills and tanks are almost unknown in the country, and all things must be below the level of the ditch to be wet.

The above facts indicate that the desert lands, while rich enough to produce large crops, are too deficient in nitrogen to nourish a citrus tree. They also serve as a striking demonstration that the orange tree is a heavy user of nitrogen. Our attention has never been called to a more positive demonstration.

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Valencia Orange Trees
One and Two Year

400 King Tangerines
St. Michael and Grape Fruit
25,000 Blue Gums
Rudis and Viminalis
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California Cultivator

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PROFIT IN PLANTED FOREST.

There are millions of acres of waste lands in California today, which could be made to produce annually large profit were they planted to forest trees for commercial purposes.

There are certain trees which pertain to certain localities but their nature, habits and longevity must be understood to make them a success. It is a waste of time and money to plant forest trees promiscuously without a knowledge of what classes will thrive in special localities. For instance, in California it has been found that white pine, yellow pine, sugar pine, mountain pine, Norway spruce, white elm, chestnut, cottonwood, live oak, willow, blue gums, and other eucalypts can all be grown and successfully in almost all parts of the state. But knowledge of their peculiar adaptability to climate, soil, and moisture is needed to insure success in a commercial way. This information may be secured by corresponding with the Forest Service at Washington, which is issuing, from time to time, circulars on the subject.

The time has come when forest tree planting may be gone into by intelligent owners of large tracts of waste land and handsome profits returned on the investment. It is a matter of common knowledge that our forests are rapidly disappearing. They have gone to satisfy the demands of commerce, and while the supply of lumber is diminishing, prices are constantly increasing.

To secure a continuous supply of timber it must be replaced by growth of the best species and the best form in the shortest possible time. This can be done by forest management; but the supply thus obtained must be supplemented very largely by timber grown in commercial plantations.

If the tracts of forest cut over each year were permitted to make a second growth, a future supply would be provided naturally, but this is not generally the case. The transformation of so large a percentage of forest land into fields and of nearly as much more, through reckless lumbering, into waste land must eventually reduce the wonderful fertility of the country, for no other natural agent is so active a soil builder as the forest. A pure water supply for large cities and towns and for the protection of irrigation reservoirs requires extensive planting along streams and canals and on watersheds.

The profits from growing timber are certain, and farsighted business men are recognizing the possibilites for conservative and highly profitable investment in forest plantations. More and more, railroads and other corporations and farmers throughout the country are establishing commercial plantations to supply the timber for their own needs or for commercial profit.

Financial profits in commercial forest planting can best be obtained by the selection of species which will produce the most valuable product in the least time. Many planters are not aware, however, that each kind of tree has a definite geographic and climatic range, beyond which it will not grow with sufficient vigor to justify its use for commercial planting. It is in selecting the proper trees for a given region that the prospective investor must use good judgment if the venture is to be successful. Mistakes are not only extremely costly, but they may not be found out for a number of years. Anyone who has observed the great number of plantations in the West which have not met the planter's expectations can readily appreciate the necessity for definite knowledge on this subject. To obtain this knowledge, direct correspondence with the Forest Service at Washington is recommended. Circulars on this subject will give all the data necessary and insure correct selection and proper care.

A HINT TO DAIRYMEN.

In Mrs. Sherman's article this week is an experience which may be of value to many dairymen now struggling on with very poor stock.

She at one time bought 58 head of wild Arizona cows. After a trying experience with them, 41 proved profitable. Twenty-one of the forty-one showed a net profit of $20 each, eleven cleared $50 each and one $60.

That may not have been an especially remarkable performance. But the point is here—How many of our farmers know whether eleven-fifty-eights of their cows clear fifty dollars or fifty cents each. More likely when fall comes there is, or there isn't enough money to pay taxes and interest and, pronto, "farming" pays or doesn't pay with no knowledge as to wherein it does or doesn't.

Nearly every dairy has its "boarders." Learn the fact then "beef" them. Nearly every orchard has its barren tree. Graft it or make it into wood. Many an irrigated field has its high spot where the water does not reach and loss of one or two crops of alfalfa or other crops on that spot results.

We suggest that "every farmer get busy with the details of business and know wherein the losses or profits come.

STREET IMPROVEMENTS.

Riverside has adopted a new city charter in which J. H. Reed, the veteran Tree Warden of that city, has recommended and the same has been incorporated into the charter, strict provisions for care of trees and streets, planting of trees and beautifying parks.

At an early day he promises the Cultivator an outline of the proposed improvements embraced in the new charter which may greatly assist other California towns struggling with the same propositions. It is doubtful if in the State there is another authority on street trees and improvements equal to Mr. Reed. For this reason his suggestions are of exceeding value.

SAN JACINTO RESERVATION OPEN.

Many letters are received by the Cultivator regarding the lands to be opened for inspection in July and for entry in August in the San Jacinto Forest Reserve. In the interest of those who are making inquiry we have been at some pains to investigate this matter and we are informed that the opening is not so attractive as many believe.

The lands are reported to be mostly barren rocky, hillsides on the northern and eastern slopes of the San Jacinto mountains and so sterile that they are considered of no value to the government for forestry purposes. If this be true they are of but little value for agricultural purposes.

OUGHT TO LIVE 100 YEARS.

Chief Chemist Wiley, of the Department of Agriculture at Washington, says it's a rank disgrace for any man in this country to die except from old age, and that all men should live to be 100 years old. The present generation, he declares, is going to live much longer than the one which came before, because it knows more about the laws of diet, hygiene and surgery. Mr. Wiley might also have added that our present system of outdoor exercise as practiced in our public schools is doing a great deal to lengthen the life of the present and future generation, because it is making stronger men and women of the boys and girls who are to be the future parents.

THE GREATNESS OF THE GOLDEN STATE

Continued from First Page

long and fifty miles wide, lie millions of acres of the most fertile land every kissed by the sun, and in all the nooks, valleys and vales of foothill and coast range, other millions of acres offer enticement to those seeking a place for home where is to be found the best there is on earth. To enumerate all that can be found for man's benefit in the hundred million acres of California were a task impossible of completion. Every industry followed by man is at its best here; every inducement that can be offered to man to make his home is found here. The climate is something more than a joy. It is a tangible, available asset and works in conjunction with man at all times. There comes no day when the skies and the air is not inviting to outdoor occupation. No stress of weather compels the farmer to provide against winter's cold or summer's heat.

A Warm Welcome.

From far toward the North, where the beautiful Siskiyous guard against cold to the southern line, where Mexico's barren sands mark the Anglo Saxon line, from the snows of the high Sierra to the equally white sands of the summer ocean, there is but one common thought—here is the best of everything. The orange grows to perfection clear to the State's northern line, and in the Southland, where semi-tropical verdure greets the travel worn visitor as he comes through San Bernardino's gateway, all Nature seems to bid welcome to those whose lives have been spent in lands where life has been a constant struggle for existence. No fruit grown in semi-tropical or temperate zone is there which cannot be found in its highest perfection in California, and one can never tell by the fruit on the table or the flowers in the yard whether it be January or June.

When it is said that California has a mean annual temperature of 62 degrees, little or nothing is conveyed to the mind of the true climatic condition of this wonderful state. California's climate should be written in flowers instead of figures.

Not By the Calendar.

Just when to plant and when to harvest in California is not regulated, as in Eastern States, by the calendar. Here planting and harvesting goes on continuously. With isothermal lines running north and south instead of east and west, with soil of the richest and with land sufficient to supply homes for millions California, today, offers the greatest opportunities of any section on the globe, for the homeseeker and the investor. It is a State where all may come and where all may find room and advantages unequaled in other land.

News of Country Life in the Golden West

Southern California

AGRICULTURE.

Covina is already planning for a chrysanthemum show this fall.

A large development of irrigation water is under way in Ventura county.

A grass fire, started near Banning, destroyed large quantities of standing grain.

The Southern Pacific people are at work on a model ranch near Imperial.

Coachella Valley hopes for the establishing of a plant for testing silk culture.

Riverside Creamery at Arlington Heights now puts up 22,000 pounds of butter a month.

Little Mountain back of San Bernardino was severely scorched by brush fire last week.

Again officials are surveying and studying the flow of water in the delta of the Colorado River.

Large shipments of thoroughbred stock were received at the Hollenbeck ranch near Covina last week.

Twenty-one carloads of cattle fresh from Arizona ranges were turned into Imperial valley to "finish off" last week.

The Patterson ranch at Oxnard is installing large quantities of wood pipe from the National Wood Pipe Co. of Los Angeles.

One of the large products from the desert country near Indio is mesquite wood of which thousands of cords are being shipped.

The "west side" potato growers near Anaheim are counting on big returns for their potatoes, some of which have been sold at two cents per pound.

The weather bureau is to establish an observing station at Brawley for the purpose of studying the climate and weather condition of Imperial valley.

Imperial Standard says methods of farming in that section have vastly improved from the primitive methods in vogue when the valley was first settled.

Big six-mule teams hauling wagon and trailer well loaded with grain lined up along the Riverside Railroad tracks from the Moreno section is a daily sight.

The Colonization Co. which is booming the Yucaipe valley is planning for a model farm where it is expected to give a thorough test of the "dry farming" plan.

Pomona Farmers' Club, with the other clubs affiliating with it, is planning for a great institute under the leadership of Mr. Neff on Friday and Saturday of this week.

A company has purchased the Foster ranch near San Juan, Capistrano, a tract which comprised 10,500 acres; it will be sub-divided, rented, or sold for small bean ranches.

The Arrowhead Reservoir & Power Co. are floating an issue of over $6,500,000 bonds to secure funds for completion of an immense power and irrigation plant for San Bernardino county.

A farmer of Santa Ana whose son was killed by contact with electric wires in a pumping plant alleged to have been improperly insulated by the Edison Electric Co., has begun suit for $10,500 damage.

HORTICULTURE.

Coachella valley orange groves have fruited one-half size already.

Already the output of oranges in Southern California is greater than that of last year.

Already the press of Southern California are reporting disastrous fires on the water sheds.

First Muscats were shipped from Imperial last week and commanded ten cents per pound.

The growing in a large way of Smyrna figs is under contemplation for Imperial valley.

One rancher near Indio claims to have harvested over $1500 worth of tomatoes from one acre.

Imperial valley is surely a warm one, for the Standard of that place says 109 in the shade just suits them.

A new packing house for handling oranges of the Bloomington district is to be erected in time for the next crop.

The packing houses of Santa Ana have finished the navel, seedlings and sweets and now have but few Valencias.

State Forester Charleton has appointed forest rangers to work in conjunction with the regular forest reserve rangers.

Warning is being published by the State Forester to campers to be careful in permitting camp fires to do damage during this dry season.

Supervisors of many counties in Southern California are passing quarantine regulations against Yuba county on account of the White Fly.

A whirlwind at Redlands last week made a lot of trouble with the apricot dryers by picking up trays of dry 'cots and scattering them in all directions.

The Covina Argus says that heavy pruning out of the center of Valencia orange trees has resulted in an immense crop in one of the Valencia orchards there.

With few exceptions, the apricot crop at Hemet was harvested by the last of the month. Many found their crops much larger and the fruit weighing heavier than they expected.

The La Mesa Packing Co., of Riverside, have elected the following directors: L. C. Waite, C. F. Marcy, S. H. Herrick, J. H. Reed, M. L. Colemen, P. D. Cover, L. H. Briggs, A. Habaerlin and J. E. Brown.

Olives will be a big crop this year at Hemet. It is said that hand-picked olives will bring from $150 to $200 per ton this year. Many olive trees were set here this spring and many more will be set next year.

A practical test has been made on the pre-cooling plant which was erected by the Santa Fe at San Bernardino, and so far as can be predicted, will be a complete success. It is claimed this plant will save $30 per car over icing.

Citizens of Santa Ana have begun suit against the Cutting Packing Co. and the California Fruit Canners' trust for the return of $4700 and real estate given the companies to encourage them to establish a cannery which was afterwards closed when the cannery was absorbed by the trust.

Northern California

AGRICULTURE.

Good hay crop prevails in most of the Sierra Valleys.

Luther Burbank has been offered $10,000 for his spineless cactus.

Petaluma has one incubator plant which claims to turn out 100,000 chickens a month.

The farmers near Corning are complaining of the inefficiency and trickery of the Jap laborers.

The bulk of the peach crop at Sutter county has been contracted for by canners at $70 per ton.

A meeting of the creamery men of Fresno, Kings and Tulare counties was held recently at Visalia.

Cottonwood, in Shasta county, is shipping large numbers of beef cattle to the San Francisco market.

Lindsay's citrus shipments, since January 1st, almost entirely Valencia oranges, aggregate 190 cars.

Tulare Register says that dairymen are in the line to make scads of money from the present indications.

Sutter county Chamber of Commerce have taken steps to make a fine exhibit at the coming State Fair.

Every hunter in the State must show his license after July 1st. See the County Clerk and get your permit.

Twenty-three cents for butter at the Merced creamery has been turned over to its patrons for the May output.

W. W. Mackie, an expert of the Department of Agriculture is making tests of soils near Woodland, Yolo county.

Several square miles of standing grain were burned near Delano last week. Said to be the biggest fire in that section in years.

Marysville Dairy Co. is planning for the building of a large barn 200x 70 feet, which will provide storage for 500 tons of hay.

Levee District No. 9, near Yuba City, has let a contract for improving of the levees, calling for moving about 200,000 cubic yards of dirt.

Papers over the North generally unite in claiming but little damage from the recent rains which it was feared would ruin much of the hay.

The annual creamery picnic of the Gridley Cannery held by the people of that place was a complete success, nearly 7000 people being present.

Redding is having a turn with grasshoppers which threaten great damage in Shasta county. Efforts are being made to wipe out the pest.

A $1,000,000 corporation has been formed at Turlock for the purchase of land to sub-divide into small ranches, also to engage in ranching for itself.

A serious foothill fire near Visalia destroyed hay presses and 240 tons of hay and much other property last week. Nearly sixteen square miles were swept by the flames.

The "west side" of the San Joaquin valley reports a fine condition of the grain fields, especially in Stanislaus and Merced county. Grain which a couple of weeks ago it was feared would give a very light crop, has been so favored by the weather that five to eight sacks per acre are promised.

HORTICULTURE.

Phillips' clings are selling at Visalia at $75 per ton.

Kuhn ranch near Visalia has been sold to the California Fruit Canners' Association.

Apricots are generally conceded to be well worth twenty-five cents per dry pound.

The Turlock Cantaloupe and Melon Association is about to build a 50x-150 packing house.

Plans are progressing for a new creamery which is about to be established at Vacaville.

Colusa county is planning to pull down the big prize offered for the best county exhibit.

The President has signed a proclamation making a National Forest Reserve in Inyo county.

Vacaville Reporter says that the prune men are the luckiest this year, with prices still soaring.

Fresno Republican reports the selling of 400 tons of green cling peaches to canners for $65 and $70 per ton.

Dinuba has a clean-up day with special attack along the line of fox tail and other obnoxious weeds along the roadside.

Oroville orange growers are on guard watching for any possible entry of the White Fly from Marysville, only a few miles away.

Committee in charge of the Tulare county citrus fair, report progress with a good fund already in hand as a starter for a successful show.

Secretary Filcher reports more promise of a genuine agricultural fair with more farmers falling in line with exhibits than for many years.

The citizens of "Tokay Town," which has become a synonym for Lodi, are planning for a carnival to be held during the State Fair week.

The people of Marysville are showing that they have the best interests of the State at heart by taking up all the orange and other plants infested by the White Fly.

The Anderson fruit belt will yield 5000 tons of prunes this season. This will be a record crop and from present appearances the prices will be a record price.

The Watsonville Pajaronian says that it seems probable that there will be strong competition for the apples produced in that section. This means money for Watsonville people who are apple growers.

The Porterville Enterprise says that a large part of the new colonies have been established near that section within the past year. This means prosperity for the Tulare county citrus interests.

An investigation amongst the orange trees of Sutter county develops the fact that no White Fly has infested them. Sutter county is across the river from Marysville which is so badly infested.

A peculiar pest which has not been named yet has appeared in the vineyards near Fresno, especially in the Wahtoke vineyard. The pest is an immense worm sometimes four inches in length which entirely defoliates the vines. It is controlled by laborers going into the field and picking off the vines and hauling away.

PER 1 BUSHEL SACK **$1.90** PER 2 BUSHEL SACK

Buy the World's Famous Egg Food No. 4

MIDLAND

IF YOU WANT EGGS
YOU WILL FEED NO OTHER.

Used by all largest and best breeders in the country. Thousands of poultrymen are using it, and it is the acknowledged standard of the world. Haphazard feeding is no longer profitable. Try Midland Food and be convinced.

Petaluma Incubators and Brooders

The acknowledged standards of perfection. All poultry men who have used these machines have supreme confidence in their ability to hatch and breed. Hence their ever increasing popularity. Winners of the Gold Medal at the St. Louis Worlds Fair for the greatest hatch, with 40 different makes of incubators in competition. How's that?

St. Louis, Mo., Dec. 8th, 1904.—Petaluma Incubator Co., Petaluma, Cal.: My Dear Sir—The awards have been held up owing to a controversy between the Exposition officials and the national commission, but today I am able to state the award of a gold medal on your Petaluma Incubators has been confirmed. You are at liberty to make use of this in any way you see fit and in due time the diploma will be issued and the medal obtainable. Congratulating you upon this evidence of the merits of your incubators, in which there was very great competition, I beg to remain, yours very truly, J. A. Filcher, Commissioner.

And Now Comes New Reward for Merit

Read the following telegram received from the Lewis & Clark Exposition at Portland.
"Petaluma Incubators and Brooders just awarded Gold Medal at Lewis and Clark Exposition."

WRITE FOR CATALOGUE 47—A BEAUTY

Petaluma Incubator Co.

Main Office and Factory, Petaluma, Cal., Box F.
Los Angeles, 505 South Main Street.
San Francisco Office and Salesroom, 83 Market St.

Beef Scraps

GUARANTEED ANALYSIS:
Protein 65%
Fat 8%
Made of Cooked and Dried Livers, Lungs, Melts and Clean Scraps. No fertilizer ingredients in **these** Beef Scraps.

Raw Bone

GUARANTEED ANALYSIS:
Protein 25%
Phosphates 45%
Made of Clean Beef Bones, surplus fat removed. Cleanest Raw Bone on the Market.

Pure, Clean Animal Matter Poultry Foods

WESTERN MEAT COMPANY SOUTH SAN FRANCISCO CALIFORNIA

Lincoln Avenue Poultry Yards

Successors to
Capt. E. Pryce Mitchell

Mitchell's White Leghorns Exclusively

Carl C. Curtis, Owner — Lincoln Ave. and Ventura St., Pasadena, Cal.

Circular for the Asking — (Altadena Cars)

Beef, Blood and Bone Will Make Your Hens Lay

This is not a medicine but a high grade nitrogenous food. Write for free booklet, "How to make Hens Lay." Our Poultry Foods are sold by all local dealers and manufactured solely by

The Pacific Guano and Fertilizer Co.

Also Pioneer Manufacturers of *High Grade Fertilizers.* Indiana and Yolo Sts., San Francisco, Cal. Write for our free booklet, "Farmer's Friend." Valuable to all farmers and ranchers.

Bemis Plymouth Rocks

Barred and White

Prizes Won at Alameda County Poultry Association Show, Oakland, 1907—22 Regular Prizes and 3 Silver Cups. Can furnish best birds and eggs at reasonable prices. No incubators lots furnished

Mrs. Florence E. Bemis, 1757 19th Ave., Oakland, Cal.

Special Sale of White Leghorns

Mitchell Stock 200 Yearling Hens at $18 per dozen
100 2-Year-Old Hens at $15 per dozen

Also some choice White Leghorn and Black Minorca Cockerels. These birds are all in good condition. Hens are from my breeding yards and must be sold to make room for my young stock. Write or call. Satisfaction guaranteed.

S. E. GREGG, 126 So. Adams St., Riverside, Cal.

Profit in the Poultry Yard

We solicit short articles of a practiced nature from the fancier and utility breeder, giving their experiences with poultry. All inquiries pertaining to feed, management, disease and its prevention, will be answered through these columns.

WARM WEATHER WORK.

With the approaching warm days the work in the poultry yard must be kept up if we wish to have our flocks in the best condition this fall and winter. All of us know how easy it is to let up on our work and we also know that our flocks will suffer more during the hot weather if neglected than they will at any other time of year.

See to the Youngsters.

By this time our young stock will be getting to a size where it will be necessary to remove them from the coops and put either in the colony houses or if we are not fortunate enough to have colony houses, put them in the regular poultry house. The latter of course is a bad thing to do, and if there is no other way we must take care to see that they don't crowd, if they do the house will get as hot as a bake-oven. We have seen chicks sweat at night until in the morning they looked as though they had been out in a rain, the feathers were still wet. After a night spent in this bake-oven they are weak and when the cool morning air strikes them or they get out in the dew, they are easily chilled and the first thing we know we have a sick flock.

It is also a mistake to crowd your old stock. Better thin them out, than try to put too many in one house. Fowls need more roosting space in summer than in winter.

What Shall We Feed?

The food is another consideration for both young and matured stock. We should feed such food as will produce bone and muscle, and avoid articles of diet that are of a heating nature. Corn should be left out of the ration entirely as it is too fattening and heating.

Make it a point to feed as much green food and vegetables as possible. If you can't arrange a run of grass of some kind, sow a small corner of each yard, say six feet square. Cover it with two-inch wire netting tacked to a frame and about three or four inches above the ground. As the grass comes through this the birds can pick the tops off and the netting will keep them from killing it by scratching or eating too close. You will be surprised how much green food you can get from a plot of this kind if it is well watered.

Keep the Houses in Condition.

If you have not already whitewashed your houses, do so at once. It makes them look cooler and certainly a great deal cleaner besides. It will keep down the lice and mites. If we have dirt floors remove several inches of the earth floor and fill it up with nice clean soil, it will help keep down the disagreeable odors; provide a scratching and dusting place. If you have dropping boards (all should have) clean them at least twice a week and sprinkle either ashes or air-slacked lime on them.

Provide a bin for droppings and when houses are cleaned put them into it, to either use or sell for fertilizer, taking care to have them as free from lime and ashes as possible. It is a good plan to keep the droppings damp, for practical tests prove that poultry manure loses more than 50 per cent of its fertility when allowed to dry, but if kept damp it is one of the best.

It will be necessary to open your houses earlier summer mornings, so the birds may get out as soon as it is light as they enjoy hunting for the bugs and worms. Be sure to have the houses well ventilated and keep the nests clean with fresh straw. Make them as inviting as possible, and you will be repaid for your trouble with nice, fresh eggs.

Breeding Yards.

We always think it best to keep one or two yards mated all the time as there is always some that want eggs for sitting. But if we only want eggs for home use, or market we would not allow a male bird in the pen as you will get just as many eggs, and they will keep better. The male birds that you desire to keep for another reason should be taken away from the hens, and placed in a separate run and fed extra well. They will come through the moult earlier and will be in a better condition to put back in the breeding yards in the fall or winter.

Range.

Give the youngsters all the range possible. It will help to develop muscle and bone. We would rather keep the mature stock yarded and give the chicks free range, we believe the old stock will be just as well off and certainly not so many eggs will be lost. Hens on free range will hide their nests, and often when we find them the eggs are not strictly fresh to say the least.

AROUND THE YARDS.

Keep the coops clean, and watch for mites.

* * *

Brains mixed with chick feed give best results.

* * *

Hard work is the correct definition for good luck.

* * *

Separate the cockerels and pullets as soon as possible, both will do better.

* * *

It takes grit for poultry, and this warm weather, we often need a little ourselves.

* * *

Anybody can start in the poultry business, but it takes a worker to make it a success.

* * *

Turkeys and chickens cannot be raised together on the same feed, especially if you feed a diet of corn or cornmeal.

* * *

Dust the chicks as soon as you remove them from the nest. To kill head lice grease the chick's heads with a little lard.

* * *

It is not necessary to have a pool for young ducks to swim in, but have the drinking vessel deep enough for them to get their bills well under water.

* * *

Don't feed chicks for twenty-four to thirty-six hours, but give water as soon as removed from the nests, keep coarse sand or grit before them all the time.

* * *

After they are once well started, goslings grow very rapidly and if well

cared for until they are well feathered they can be turned into a pasture and will look out for themselves. They are great foragers and eat great quantities of grass and other green stuff.

* * *

Canker.

My hens (S. C. White Leghorns) have a yellow, cheesy growth sometimes in throat; sometimes in windpipe or in roof of mouth. It appears not to be roup (diphtheria.) Sometimes the eyes are swollen and slight discharge from nostrils, but think it is water from the sore eyes; little or no odor. Hens fat (generally.) Sometimes find them choked to death—windpipe full and no other appearance of sickness. Notice them gaping at times. Hens have ten acres range in orange orchard. Plenty fresh water—have used bluestone since they are sick. Have begun treatment you prescribed for little chicks with canker sore mouth: sulpho-carbolate of zinc and peroxide hydrogen. Is that right? Canker seems to eat throat out at times.—Mrs. M. M.

You have serious trouble and you should be very careful to keep it from spreading. Separate your sick fowls from well ones and use a good roup cure. You can get same at any of the poultry houses advertised in the Cultivator. For those having canker, clean canker out of throat with a swab. Then take a stiff feather and apply Germazone well; this done once a day for two or three days will generally cure canker. Put Germazone in drinking water about one part to ten of water. Bathe eyes of afflicted fowls with one part water to one part Germazone. The bluestone you are using is also good. Find cause of trouble if possible and remove same. Are your birds roosting in a draft? Are you very careful as to cleanliness?

* * *

Mites on the Brooder.

In starting poultry raising on new place if everything is new and chicks hatched in incubator and no fowls bought would hens ever get lice or mites? Are ducks troubled with lice or mites?—F. G.

For some unknown reason poultry will be troubled with lice and mites. Even though they are hatched in an incubator and put in coops that have never had chicks or fowls in. One of the best theories we ever heard was that birds carry vermin. We know that English sparrows and pigeons will spread vermin. Ducks are never troubled with lice nor mites.

MARY HAD A LITTLE—!

Mary had a little hen
Upon the little farm,
Against the wolf behind the door
It proved to be a charm.

Each day it laid a little egg,
Which Mary sold at town,
And thus she bought her groceries,
And now and then a gown.

The years passed, and Mary paid
The little mortgage due,
And sent her girl to boarding school,
Her boy to college, too.

She has a nest egg in the bank,
And even keeps a cook,
And everything about her has
A thrifty, well-kept look.

She says to those who daily fail
With needle, brush and pen:
"If you would do as well as I,
Just keep a little hen."
—Daisy Wright Field in Rural Magazine.

Young folks tell what they do, old ones what they have done, and fools that they intend to do.

The sure mode of being deceived is to believe ourselves to be more cunning than others.

CULLING THE FLOCKS FOR SUMMER LAYERS.

We take the following from the Ohio Farmer as it covers the field about as thoroughly as any we have seen:

"As the spring egg season begins to wane and we are pretty nearly over with the hatching and brooding season, we begin to look forward to the flock that we must depend upon to produce eggs during the summer season. We find it very profitable to keep a good-sized flock of laying hens about the farmyard during the winter and spring laying season, but in order to give the increased flocks of growing chicks better facilities for range, it is best policy to cut down the laying flock, and get a better growth from the spring-hatched cockerels and pullets.

"Each season, at the waning of the laying period, we cull over our flocks, and discard those which we are aware will not be profitable for us to keep as egg producers during the heated summer season. The hens that have been the most profitable as winter layers and brooders in the spring hatching season are the early-hatched pullets from the previous year, and the two-year-old hens that were in prime condition at time of selection. These are the hens that at the present time constitute our flock, and at the closing of the hatching season we find them divided into several grades.

Kill Off the Fat Ones.

"Among this flock will be found a number of two-year-old hens that have become over-fat from high feeding for egg production, and as warmer weather advances they become still more so, and drone about lazily and will not produce eggs during the season to warrant their keeping until the autumn markets. Hence while spring markets are brisk, and such stock in good demand, these hens are culled, and placed upon the market. Indeed we keep over but very few hens of this age unless they have exceptionally good markings and promise a good constitution to carry them through for the production of eggs for hatching the following season.

"A few of the early-hatched pullets are also discarded for the same reason.

"Many of our hens become very fat while upon the nest, brooding, and rather than risk chances of reducing them and getting them back to a good laying condition we let them go upon the market while fat. Therefore, when our flock is properly culled and placed back in the farmyard we have endeavored to not only make of it a respectable looking flock, but as well a profitable laying flock.

Summer Layers.

"Then, in this summer laying flock we have an invaluable acquisition in the way of the late-hatched pullets from the previous season. These pullets have been carefully fostered during the winter season, not with the expectation of even early spring eggs. Indeed they are not laying yet at this date, but when July and August eggs are scarce upon the farm they will be furnishing nice fresh eggs. They appear to fill in a niche in the laying season that no other fowl can quite reach. The hatching period is Nature's rest of the laying hen, and if she be kept in proper condition during this time, with the right feeding and necessary condimental foods, she will be in good condition to commence laying again and will be paying her way quite soon.

"It is a mistake for the poultry keeper to attempt to keep too large a flock of hens during the summer season, as well as to over-crowd his houses in the winter. The farm range is free so far as it goes, but when it becomes over-crowded with fowls the profits must be reduced, and the best method is to curtail a portion of the flock before the profits are seriously affected.

Feed Them.

"A flock of hens should not be expected, even upon the largest ranges about the farm-yard, to subsist upon what they may pick up, for they will be found overstepping their privileges and doing damage to growing crops that otherwise would not result if they were given a ration of grain each day. Our flock gets the same care during the summer season that they get in winter, and we know that this extra care brings us in more eggs than to balance the extra added expense. Besides we need not dog our hens from the fields where they are damaging the crops from aggravated starvation. Feed the summer layers well and they will help feed their owner.

Water Them.

"Many flocks of fowls suffer immeasurably during the heated season from lack of water. They cannot be expected to furnish an abundance of eggs without water. Hens drink an abundance of water when kept where they can get it. At our place we have securely placed within the shade of a farmyard building a sixty-gallon barrel upon the side near the bottom of which we have placed an ordinary drinking fountain, such as is sold at all hardware stores, and used for the watering of swine. This attachment works automatically and the barrel is pumped full of water when necessary with the farm wind-pump, and it is safe to say that our fowls do not suffer from want of water at any time, even though the season be pressing and busy.

"Ordinary poultry fountains are good for their purpose, but where a large flock of fowls is dependent upon them for water, and the season is busy, the housewife too often finds them empty and the fowls starving for water. It is amazing what a quantity of water a bunch of fowls will consume if they have access to it, and they should have a plentiful supply, especially those that are being depended upon for the production of eggs."

DUCKS ON THE FARM.

No one can make so much money growing a limited number of ducks as the farmer. His business usually confines him pretty closely to the farm yet gives him a little spare time in winter and early spring which he might profitably spend raising four hundred young ducks, which could be sold at a few hundred ducks each season.

From a flock of forty good breeding ducks and eight drakes there need be no difficulty in raising four hundred young ducks which could be sold at an average price of four shillings per head. That means that they would produce more in four months than many farmers produce in a year from a small herd of cows and more than they receive for the sheep and swine they sell.

The equipment required is not expensive. A house thirty feet long by twelve wide, with a shed roof high enough to give head room to the caretaker, will accommodate forty eight birds, equally divided into two flocks.

It costs money to change your mind when you get the wrong roof on your house.

Send to us for Book 35 and samples. Go to your dealer for Genasco Ready Roofing.

THE BARBER ASPHALT PAVING COMPANY
Largest producers of asphalt in the world
PHILADELPHIA
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Santa Ana Poultry Ranch
LINE BRED
WHITE PLYMOUTH ROCKS
EXCLUSIVELY
We won as follows at the Poultry Breeders' Society Show: 1st Cock, 1st, 2nd, 3rd and 4th Hens, 2nd and 3rd Cockerels, 4th and 5th Pullets and 2 Silver Cups.
Some Extra Choice Cockerels For Sale. Eggs, $2.50 per 15, $10 per 100.
RHODA E. DURFEE
1110 W. First St., Santa Ana, Cal.

Baldwin's White Leghorns
Egg prices cut in two for May and June. Fine youngsters at reasonable rates. Good older stock cheap to make room. Send for latest price list.
Frank E. Baldwin
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Ross & Tate, Altadena, California
Breeders and Importers of
Buff, Black, and White Orpingtons
Have for sale Trios, Cockerels and Pullets. Eggs for hatching, settings or hundreds. Write or call.
Two Blocks North, One Block East Altadena Post Office

BARRED ROCKS
EXCLUSIVELY
Send for Sixteen-Page 1906 Catalogue
H. R. CAMPBELL
BOX O PETALUMA, CAL.

Spargur's Trap-Nested White Leghorns
Cockerels for sale from my best hens. A few Light Brahma Hens and Roosters for sale. Eggs from I. R. Ducks and Blue Andalusians at $1.00 per setting, $5.00 per hundred.
H. G. Spargur, Soquel, Cal.

GEORGE W. POPPELWELL
Successor to C. H. Robbins
Breeder of White Leghorns, Black Minorcas and Barred Plymouth Rocks. Eggs for hatching, $2 to $5 per setting. Single birds, trios and breeding pens a specialty.
Yards at Ranch (10) Phone Main 1583
943 W. Fremont St., W. Stockton, Cal.

SET Incubators and Hens with Eggs from good, healthy, farm-raised
White Minorca and White Wyandotte Stock
S. W. MORGAN, Sunnyside, California, has such Price $1.50 setting, $7 per 100

WHITE WYANDOTTES Hubbard Stock heavy-laying prize-winning strain. Commencing June 1st, eggs, $5.00 per 100; baby chicks, $2.25 doz. Cannon Poultry Co., 2851 Morgan Ave, Los Angeles Take Slauson Ave. car to 29th St., walk 1 block west

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The World's best layers.
Write for Folder.
J. W. Shade San Bernardino, Cal.

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And Golden Sebright Bantams, prize winners
Stock and Eggs in season
M. E. Dillingham, Box 67 San Gabriel, Cal

MY EXHIBIT OF
WHITE, BUFF AND PARTRIDGE **Wyandottes**
Won 26 Ribbons and Special Prizes at the Poultry Breeders' Show, 1907
R. D. Box D87 L. E. BERKEY, Fullerton, Cal.

Anconas Lay Anconas Pay
Imported and Domestic Matings Now Ready. Surplus Stock All Sold. Let us book your order at once for future delivery. L. L. Viereck, Pres. Ancona Club of America, Albany, Oregon.

Don't let your fowls moult for months, but feed them

West Coast Egg Food

A highly nitrogenous Poultry Food, rich in protein, composed of the finest grains, seeds, roots, salt, iron, charcoal, condiments, shells, oil cake, bone, meat and dried blood to keep the poultry in good health, build up a strong and vigorous system, make the hen moult early and convert the surplus aliment into eggs during the season when they are scarce and high. A scientifically-balanced ration containing no filler but every ounce is pure food. The hens like it, they eat it, there is no waste, hence it is the cheapest Egg Food on the market, fed either dry or as a mash. For sale by dealers everywhere.

Manufactured by the

West Coast Stock Food Co.

818 San Fernando St. (Through to Alameda) Los Angeles, Cal.

Diet, Not Dope

In a speech before the Medical Institute in London, England, the other day the physician for King Edward called the attention of the assembled doctors to the fact that the use of drugs was being superseded by the use of proper food, air and exercise; and he was glad of it, believing the less drugs put into the system the better. With man so with chickens.

Use good diet. A. C. W. Foods, plenty of fresh water, a good yard to run in and you will have no trouble with poultry.

A. C. W. Poultry Food for sale at all dealers, made by

EGG FOOD A·C·W IT FILLS THE BILL

The Agricultural Chemical Works

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A GOOD TONIC **ACME ROUP CURE CURES**

FED TO YOUNG CHICKS WILL KEEP THEM HEALTHY AND VIGOROUS; THE OLD FOWLS WILL MOULT QUICKER AND EASIER; PULLETS WILL LAY EARLIER AND LONGER

LEE'S EGG MAKER

IS THE BEST TONIC MADE

LEE'S LICE KILLER IS GUARANTEED

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We manufacture the Improved Pacific Incubators and Combination Brooder, and also the "Business" Incubators and Brooders, and they can't be beat.

Our stock of Poultry Supplies is large, fresh and complete, at the very lowest prices.

Come and see us at our new store. We'll treat you right. Or send in your orders.

PACIFIC INCUBATOR CO.

707 S. Spring St. Los Angeles, Cal.

Excelsior Egg Food

By scientific and careful experiments we have been able to compound a ration in our Excelsior Egg Food to produce the desired results, that is

More Eggs

It pays to give the hen a highly nutritious balanced Egg Food Mash, mixed in proportion to insure the results. Use it the year around, and you will have healthy hens, and more eggs when they are high-priced, as well as when they are cheap.

If your dealer doesn't handle it telephone or write us.
Price 90-lb. sack $2.15; 25-lb. sack 75c.

Del Monte Milling Co.

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200-250 Egg Fowls | **WHITE WYANDOTTES** | Over 60 Prizes This Season

Eggs Half Price for June. Orders now Booked for Day-Old Chicks for September Delivery.

CAPITOL AVENUE POULTRY FARM

A. L. R. MANTZ Rural 21, Box 98k SAN JOSE, CAL.

The White Faced Black Spanish

Are famous as layers of large white eggs at all seasons of the year. We won all prizes at the Breeders Great Show, 1907. Choice Cockerels For Sale, $5. Eggs, $1.50 per 13, $4 50 per 50, $8 per 100. Special matings, $3 per 13. Fertility guaranteed.

Mrs. W. H. O'Connor Lock Box 112, Dolgeville, Cal.

Do little things well now, so shall greater things come to thee by and by asking to be done.—Persian Proverb.

WHITE WYANDOTTES EXCLUSIVELY

Good, White, Typical Birds. Stock and Eggs For Sale.

W. A. SEYMOUR

407 No. Beaudry Ave. Los Angeles, Cal.

When writing advertisers, mention Cultivator

THE GUINEA AS A PROFITABLE FOWL.

With the gradual disappearance of natural game birds, there is growing up a demand in the cities for a domestic bird which has all the qualities of the game bird in color and texture of the flesh and the game flavor that epicures so much delight in. We refer to the guinea fowl, which has heretofore been kept more as an odd bird than because there was any particular profit in breeding it.

Let them Alone.

The Guinea, as we know it, is but one of many varieties, all of which originally came from Africa. The Ancient Romans were acquainted with the guinea fowl, but there is good reason for thinking that the guinea fowl of old Rome was one of the species found in Eastern Africa, rather than the native of the West Coast, which is found in large numbers in its native country, identical in shape and color with the guinea of our farm yards.

Guineas are fowls that do best when treated on the let-alone principle. They have a natural inclination to wander in the fields and seek their own food. If given a wide range, such as they can have on a farm, they care little for the feeds of domestication, wandering forth early and staying abroad late during all of the year when they can find seeds, green stuffs and insects to eat.

In mating guineas, not more than two hens should be allowed for one cock, although occasionally a cock will mate with more than this number. In their natural state they mate in pairs, but under domestication they have broken away from the original plan and accept more than one mate.

It requires from twenty-six to twenty-eight days to hatch guinea eggs, and it is best to hatch them under common hens.

Not very Tame.

When they are first hatched they are as wild as quail and will run away and hide, and finally become lost if they are not confined in a pen in which they cannot find a hole out of which they can creep, and they will find the hole if it is there. A pen made of foot-wide board will keep them long enough so they will become accustomed to the mother hen. Once they get acquainted with their foster mother and learn her language, they are very affectionate and will talk to her as they follow her about, never leaving her day or night. Indeed, they stay with the hens all the season and even through the winter.

Guineas are quite prolific layers, hiding their nests in the fields as does a turkey, unless they have been accustomed to sleeping in a house. If hatched with hens they do not have such wild dispositions and frequently lay in the nests provided for hens, until about the time when they become broody, when they will steal away to lay a clutch of eggs to hatch.

The young are quite tender for a few days and should be fed little and very often at first. In a short time they become hardy and after that will endure any kind of weather that may come, even to sleeping out of doors in the coldest weather.

The eggs are small but of good flavor, but there is no market demand for them and, except for home consumption or for use in hatching, they are not valuable.

Not Good Mothers.

Guinea hens are not good mothers. It must be a very favorable season in which a guinea hen will raise more than a few of the young she hatches. As a rule, they wander about through damp grass until the young are mostly lost.

Have that Gamey Flavor.

As remarked above these birds are coming more into demand all the time from city consumers, who are beginning to appreciate their tender palatable flesh, which hardly anyone can distinguish from grouse or pheasant flesh. It is a fact that in the larger cities there is a regular market for guineas at good prices, which are served as game at restaurants and hotels.

The common pearl guinea has darker flesh than the white variety. The white guinea is never found in its native country, the loss of color being an accident of domestication, which has been taken advantage of to breed a new variety. Wright leaves the inference in the minds of his readers that white guineas are hardly known in Europe, but in this country they are not uncommon. We have always thought they were not as wild as the darker colored ones, but this may be a mistake.

There is little difficulty in distinguishing the sexes to one who is familiar with these birds, but the beginner is often at a loss to tell the males from the females. The male has a coarser head than the female and a different voice. It is the female that has the characteristic cry of the breed. She alone calls "buckwheat, buckwheat," the male never using this call.

Good as a Watch Dog.

As night watches a few guineas are a perfect defense. They know a stranger at any time and will set up their clatter day or night, and he is a bold chicken thief who can withstand their discordant screeching when he invades a poultry house where guineas are kept.

Guineas should not be hatched until continuous warm weather has come, say, the last of May and during June. The female guinea usually does not sit until later than this. A small flock is profitable and interesting.—Poultry.

TURKEY TALK.

It is important that turkeys should have a wide range. The birds are natives of the wild forest and they have not fully been weaned from a desire to roam over a large section of country. In raising turkeys on the farm provision should be made to allow them to run at will all over the place. If you have alfalfa-fields for them to roam in, it will be all the better for both the alfalfa and the turkeys, for they will rid it of the grasshoppers and bugs that prey upon it. Wide range insures a variety of food and that is important in the production of poults. The birds will become sickly if fed only one kind of food, while they will make rapid growth if given a variety, notwithstanding the fact that the different feeds may contain practically the same food elements. Then a wide range, in a great measure prevents the increase of parasites. There is nothing that hinders the growth of the poults more than parasites, which increase very rapidly when the young turkeys are confined to small areas. In giving the birds a wide range, it should be remembered, however, that they cannot stand an excessive amount of dampness. They should not be given their liberty while there is a heavy dew on the ground or immediately after a rain.—Kansas Farmer.

Irrigation and Forestry

FOREST FIRES!

THE attention of all who inhabit or frequent the forested areas of California is called to this abstract of the forest laws:

Stat's. 1907: ch. 536, makes it a misdemeanor punishable by a fine of not less than twenty-five nor more than five hundred dollars to commit any of the following acts:

1. To set fire, or cause or procure fire to be set to any material being or growing on lands not the property of the person who sets such fire without the permission of the owner of the land, except that camp fires may be built on unclosed lands if the owner has not forbidden such building in any way and, provided the builder totally extinguishes the fire before leaving it.

2. To allow fires lawfully set to escape from the control of the person having charge of threof or to spread to the lands of another.

3. To build a fire anywhere (excepting camp fires, and fires set to facilitate redwod logging) during a dry season without first obtaining written permission from a fire warden.

4. To use any engine or boiler except such as use oil as fuel near any forest, brush or grass land unless such engines or boilers are provided with adequate devices to prevent the escape of fire from any part.

5. To refuse to obey the summons of any fire warden to aid in extinguishing fires. (Note: for this the fine it not less than ten dollars.)

Further information may be obobtained by addressing the State Forester, Sacramento, California.

DEAD EMPIRES.

Why do nations die? asks Forestry and Irrigation and then answers pointedly. Other causes may operate, but destruction of resources is fatal. Before the forests of Lebanon were destroyed Palestine supported in affluence ten million people. The mountains have long been denuded. Forbidding slopes, barren and ugly, rear their weird forms sharply above dismal and desolate valleys. Scarcely four hundred thousand people remain in all the region, and most of these are in wretched, hopeless poverty.

Syria, once maintaining a multitude of prosperous towns and cities —Antioch having a population of half a million—is at present the scene of irreparable ruin. The destruction of Syria's forests, begun 2650 B. C., followed by the disappearance of her soil and the decay of her industries, would alone have produced this effect. Babylon, once capital of the world, is a heap. Nineveth and Carthage, once the seats of mighty civilizations, and abundantly equipped by generous Nature for permanent life, are desolate wastes. Man destroyed the forests, and lands which once flowed with milk and honey were transformed into deserts.

FEARED THE PENALTY.

People—Come, come, Willie! Don't cry because you've barked your shin a little bit. Act like a man.

Willie (blubbering)—Yes! then you'd whip me. You told me you would if you ever caught me swearin'.

OVERFLOW LANDS.

It is possible a hint of value to owners of overflow lands along the Sacramento and San Joaquin rivers may be in the following item. Of course, those lands may be considered "too valuable," but standing timber will be valuable one of these days:

"President of the University of Illinois gave a lecture before the students there in which he discussed the uses and supply of timber and the utility of different kinds of trees. Dr. Burrill predicted disappointment in the results of the Illinois Central catalpa grove which has been planted to supply railroad ties, because it is planted on impervious clay land, while the suprisingly quick growths for which this tree is noted are made on rich soils. The lecturer pointed out that there are many rich lands that are useless for agriculture because of being frequently overflowed and remarked that these would be suitable sites for catalpa groves."

WHY NOT A "WOOD LOT."

Nearly every farm in the East has its wood lot. It is not there because of any foresight of the owner, as a rule, but its great value is being more and more brought to the mind of the owner. Now, why not a wood lot in many California ranches. About the only objection is that we can't plant today and gather tomorrow. But if even the older ones of this generation will plant trees in California soil and under California sun, it may prove a blessing—and a profitable one—to even the planter.

We now note that: "Forest planting studies for the benefit of farmers settling upon the lands irrigated by a number of the projects of the Reclamation Service, are being especially pressed by the government wherever such projects are nearing completion. In these regions trees are scarce or wholly wanting, and whatever forest growth is needed to provide protection for the farm or wood for farm uses must be secured artificially. Under such conditions the value of the forest stands out conspicuously. Wood and shelter must be had, and ground space must be given to forest trees, even on soil which in forested regions would be regarded as too good for any use but agricultural crops. Indeed, it is there most readily recognized that the forest itself is a true agricultural crop,

A NATIONAL RESOURCE.

Experience abroad and at home proves that national forests pay says Forestry and Irrigation. Our own, though in their infancy, yields more than half their annual cost; soon they will repay all of this cost and more. They are increasing in value fully ten per cent. per annum, while the cost of administering them is but one-third of one per cent., or one-thirtieth of their annual growth in value. This gain is in addition to the gain in general well-being from preserving forests, climate, scenery and the vast economic interests involved.

Our people are fearfully at sea on the forestry problem. Learn a lesson from France; there the government furnishes an army of 6000 men, foresters, rangers and keepers— a real army—subjected to military discipline, which, in war, is turned over from the Department of Agriculture to that of War. The government, in addition, furnishes all the seed to the land-owner. If under these and more favorable conditions the land-owner refuses to do the work, then the government steps in, pays for the land, and plants the trees.

The use of the waters for irrigating purposes of our great western rivers and their ten thousand tributaries in the mountain valleys has done more to stimulate the peopling of the West than anything since the great emigration from the East to the black prairies of the Middle West says the Farm and Home. It seems very strange under all these circumstances that Uncle Sam is finding so much trouble to secure settlers to come in and occupy the gracious acres brought into fruition by the reclamation service. If history could repeat itself this looks like a repetition of the banquet which the rich man spread and to which the invited guests did not come.

FOR INSTANCE.

Bridget (reading laboriously:) Hov you seen this, Pat? It sez here that whin a mon loses wan av his sinses, his other sinses gets more develyuped. F'r instans, a blind mon gets more sinse av hearin', an' touch, an'——

Pat Shure, an' it's quite thrue; Oi've noticed it meself. Whin a mon has wan leg shorter than the other, begorra, the other leg's longer, isn't it now?—[Exchange.

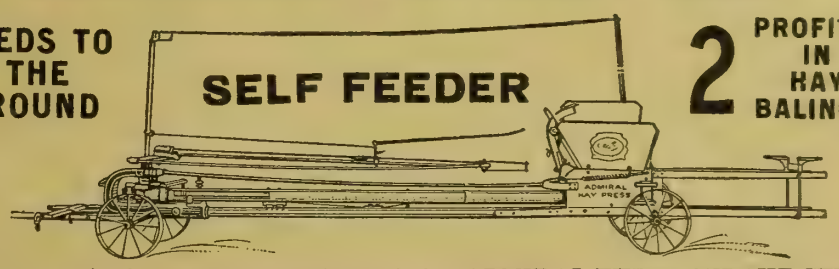
What is the oldest piece of furniture in the world? Answer—The multiplication table. What tree bears the most fruit to market? Answer—The axle-tree.

AN ADMIRAL WITHOUT COST

3 FEEDS TO THE ROUND

SELF FEEDER

2 PROFITS IN HAY BALING



The difference in the increased earnings of the ADMIRAL THREE-STROKE SELF-FEED PRESS more than pays for the press in one season, at a conservative estimate of 2½ tons per day over the old style two-beat, foot-feed press, besides the ease of labor on both men and team, and better work. Let us figure a little to convince you.

2½ Tons per day for one week, 15 tons at $1.50 net.....$ 22.50
One month's earnings over the other press (26 days)..... 97.50
On an estimate of five months' work out of the year..... ..... 487.50

The above gain with the ADMIRAL more than pays for the press.

PACIFIC IMPLEMENT COMPANY, GEN. AG'TS.
131 TO 153 KANSAS ST.. SAN FRANCISCO. CAL.
Write for Circular and Full Information. ***A. A. WHITNEY, Special Agent***
Room 203, 316 Commercial St., Los Angeles, Cal.

TALLERDAY SURFACE IRRIGATION PIPE

SAVES WATER, GRADING AND TIME

The **only** way to **Irrigate Alfalfa. Cheaper** than **Flumes.** This is only **one** of our **specialties.** We make **Riveted Water Pipe** in lengths of **ten feet** from **single sheets.** Let us **prove** to you that we make **Pipe** and **Tanks right.** WRITE FOR CATALOGUE.

TALLERDAY MANUFACTURING CO.
636-7 Pacific Electric Building **Los Angeles, Cal.**

When shingles have warped, split or burned—when coal-tar has crumbled and melted—when tin has rusted away—you will wish you had put on

Pioneer Rubber Sanded Roofing

Put it on now—save money, worry and repair bills, and get perfect protection all the time.

Booklet "R" will tell you all about it. A practical encyclopedia of the best roofing materials, roofing papers, building and insulating papers. It is sent free, with samples and prices. If your dealer can not supply you write to us today.

PIONEER ROLL PAPER CO.
LOS ANGELES, CAL.

Gem Hay Press

The Gem Press is the latest production of Mr. Livingood, the patentee of the Lightning Press, O. K. Press, Star Eagle Press and Admiral Press. FULL CIRCLE, two feeds to each round. THE POWER is simple, yet strong and certain. PLUNGER STROKE is 40 inches. 30 INCH ACTUAL FEED OPENING into the bale chamber. THE CRANK ARM IS ONLY 9 INCHES. THE OWNER OF A GEM HAY PRESS HAS A PRESS OF SUFFICIENT CAPACITY TO PAY LARGE RETURN FOR ITS OPERATION.

Newell Mathews Company

200-202-204 No. Los Angeles St., Los Angeles, Cal.

GLOBE IRON WORKS

We have a number of Centrifugal Pumps in stock for immediate delivery

We make a specialty of
Repairing Engines and Pumps

Gas Engine Cylinders Rebored, Pumps Rebabbitted, etc. Experts sent out to remove your machinery troubles. If you have any, it will pay you to consult us.

Builders of General Machinery

Phones: Main 5165; Home 5337
951 No. Main St. Los Angeles, Cal.

THE WHITE WYANDOTTES THAT WIN AND LAY

$15.00 and Up Per Dozen

Lakenvelders, per pair, $8.00; trio, $10.00.
Mammoth Bronze Turkeys Reasonable.

Mrs. C. D. Hubbard, Box 282, San Fernando, Cal

When writing advertisers, mention Cultivator.

Queries and Replies

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.—Ed.

Flies on Stock.

What will keep flies from stock and from houses?—X., Pomona.

A cool, dark place should be provided for a horse or cow to run in to escape from the flies. Many washes are recommended, some manufactured and sold especially for the purpose which can be bought at feed stores and other places. A simple home made wash is: steep for some time one pound of tobacco stems to make when cool about three gallons. A little turpentine or if there be no sores a little coal oil may be added, say an ounce to the gallon. Wash the stock thoroughly and lice, flies and other pests will have but little use for such animals for a short time at least.

As to anything to burn in the house to keep flies away, any smoke is good but as hard on humans as on flies. Buhach is the best of anything we know of and when fresh and thoroughly dusted in a room or near a door, is very distasteful to all insects of which it will kill many.

Dr Oliver gives as a remedy for flies on stock to spray or sprinkle over the horse or cow a mixture of fish oil one quart and creoline 4 ounces.

Potato Troubles.

My potatoes were doing well till something affected them. The leaves turned black, dried up and the plant died. I noticed small green insects on the underside of the leaves which I called lice. The leaves curled over before they died.

Was it blight? Please discuss it, and give a receipt for Bordeaux mixture, if this is what to use.—Subscriber.

It is very likely that the lice on the under side of the leaves had something to do with them turning black and dying. The blight also affects potatoes that way. Bordeaux mixture will head off the blight if applied in time, but it will not affect the aphis (lice). These insects will disappear of their own accord as they have numerous enemies.

Spray the potatoes when they are a few inches high with Bordeaux mixture and again when eight or ten inches high. The mixture is made by mixing lime, bluestone and water in the proportion of 4—4—40 in the order named. Do not mix all together at once. Dissolve the bluestone in 20 gallons of water, slack the lime in plenty of water and make it up to 20 gallons and pour the two together so as to avoid a concentrated solution.

Planting Onions and Peanuts.

Is it too late to plant silver-skin onions, and a California variety of peanuts the first week in June?

Also is it too late to plant potatoes at this same time for a fall crop?—H. J. N.

I should deem it too late to plant silver-skin, at least for market. The same answer will apply to the peanuts. A more satisfactory and intelligent answer could be made if it was stated whether your correspondent wished merely to grow these for his own table, or for market. It is often possible to grow certain things on a small scale and with special attention, with a fair degree of success, when failure would surely result if undertaken on a large scale.

It is not too late to plant potatoes for the second crop. I have seen good results in this locality when planted as late as the third week in July, but should prefer from the first to the tenth. It is a good plan to be governed largely by the practices of one's own locality, for local conditions play such an important part in the operations of horticulture in California.—Q. A. L.

Dropping Figs.

An inquirer recently complained of his figs dropping before ripening and asked cause. The question was referred to Geo. C. Roeding of Fresno who has a wider knowledge of the fig than any other on the coast and he replies as follows:—

"It is quite probable that the fig tree, which your subscriber inquires about, is a Caprifig, or it may possibly be of the Smyrna type. Whether a Capri or Smyrna, either one would drop their figs, unless the Blastophaga was present. Kindly instruct your subscriber to send me a branch of his fig, about 12 inches long, also a few of the figs, wrapped up in a damp piece of burlap by mail, and possibly I can identify the variety for him.

Dodder.

Will you please tell me how to get rid of dodder in alfalfa?—Subscriber.

A common way to kill it when started in an alfalfa field, is to pile straw on it and burn it. This kills most of the alfalfa that is burned over. We one time cleaned it out of an alfalfa patch by cutting the alfalfa clean and as close to the ground as possible and then covered the stubble with moist dirt. This was done after all the dodder seed was sprouted. After covering with dirt we went over the spots and cut out with a pocket knife, every piece of stubble that came above the dirt. We worked on the theory that the succulent dodder would rot when covered with wet dirt. The dodder never showed up again and in due time the alfalfa come up uninjured. It will do no good to follow this plan after the dodder has gone to seed as covering it would only give it an advantage. Cover the dodder not less than three inches deep.

Garden Questions.

Shall I take up freesias and other bulbs when done blooming, or just leave in ground?

My hybrid perpetual roses have very long canes five to seven feet—should they be cut off now or in fall before watering—and how low down?

I got from a nursery a white flowered climber labelled Rhynchospermum—cannot find it anywhere—what is it?

Take up the freesias and store in cool, dry place. As to "other bulbs" that depends. Gladiolus, Ixia, Watsonias and many others should be taken up with their increase then, when placed back in the ground this fall will grow better in their enlarged space than if left together. Callas may be left in ground, but if old and crowded you will get better

flowers next season if they are taken up and divided. Amarillis, Agapanthus and others are injured by being disturbed.

The next issue of the Cultivator will have an article on July handling of bulbs in its ornamental garden department. Do not prune the roses until just before the fall watering. Then prune back severely and put on water and fertilizers.

Rhynchospermum is a comparatively new Japanese importation said to be a very nice plant. It is not a high climber.

Worms.

A green slug has taken possession of my young grape vines and is doing considerable damage by eating the young growth. Can you tell me how to get rid of them.—D. W. M.

Spray with one pound of Paris green to 200 gallons of water. Add about five pounds of lime to the wash.

Legal Queries

Weed Law.

Will you tell me if municipal trustees can enforce the present weed law in California? The marshall has threatened to cut the weeds on a vacant lot I own, and charge the same to me as a lien on the lot Can he do so?—R. P. S., Barkersfield.

Yes. The weed law is being enforced in different parts of the State and undoubtedly will be until declared void by the courts.

Lease.

Will you tell me if it is necessary for a lease to be acknowledged before a notary public? I leased a piece of ground for two years and nothing was said in the lease about the right to sell the property. Since the lease, the property has been sold and notice has been served on me that I cannot put in a crop on the land next year. The party who gave me the lease insists that I am a tenant at will because the lease was not acknowledged before a notary public and recorded. Is there anything in the contention of the original owner of the land, and what are my rights under the lease?—Subscriber, Corcoran.

Acknowledging a lease is for no other purpose than to have it recorded. An acknowledged and unrecorded lease for a term of more than one year is void as against any subsequent purchaser or mortgagee of the same property in good faith and for a valid consideration. This applies to all conveyances of real property. The Supreme Court of this State, however, has held that an unrecorded deed is valid as between the parties and as against subsequent purchasers having notice thereof, actual or constructive, at any time before the payment of money.

Homestead.

My husband filed a homestead in Nebraska. He worked the claim two years and died. Can I have the balance of the claim worked out and receive a patent from the government?—Sarah P. G., Redding.

Unless you have forfeited your rights by delay you are entitled to have the homestead proven up in your name. This will require a proper showing before the U. S. Land office in which he made his application and by complying with the homestead requirements; living on the homestead, etc.

Validity of Marriage Contracts.

I have been married to my present husband three years. He gave me a marriage contract to certain property he owned at that time. Since then it appears he had willed this property to his son and daughter. Am I cut out of my rights to the enforcement of my contract by this will? The will has been recorded.—W. H. M., Eureka.

It depends upon the contract. If you are now in possession of the property under the contract, the will will have no effect as to such property.

Mechanic's Lien.

I have been working under a subcontractor on a ditch, and I have not been paid my wages for two months. Can I file and enforce a mechanic's lien for my unpaid wages? What is allowed for the filing of a lien if such a lien can be filed?—R. M. P., Redlands.

If it is not too late you can file a lien. Better consult a local attorney.

Rights Without Will.

My husband died in Kansas without leaving a will. What is my dower right, and how can I secure it?—M. E. L., Alameda.

It depends upon whether he left any children or not. You have a half interest in his estate anyway, and may have it all. Probate proceedings in the proper court will be necessary to secure your interest. You may be able to secure your interest through local attorneys in this State.

Subject to Mortgage.

A buys land of B giving part cash and a note secured by mortgage for the balance. A sells this land to C giving him a deed in which a claim is inserted (subject to a mortgage which the party of the second part assumes and agrees to pay). C subsequently ascertains that the interest on mortgage and taxes have not been paid. Who will be required to pay this, A or C?—E. D. D.

C having assumed the payment of the mortgage will have to pay the interest thereon due. Otherwise the mortgagee will foreclose and sell his property. He will also have to pay the taxes or the land will be sold to the State for the payment of the same. He might recover the interest and taxes if his agreement was for the property to be clear of all encumbrances except the principal of the mortgage.

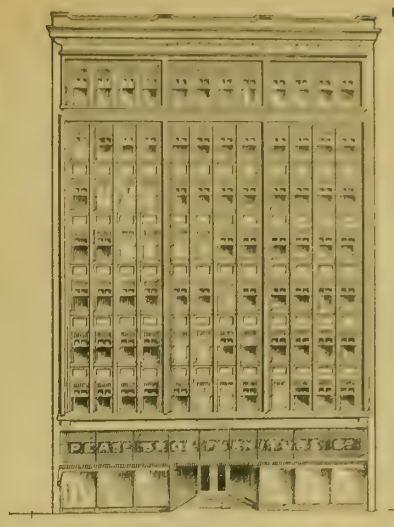
"CHEW AND CHOOSE."

The claims of Mr. Horace Fletcher and Professor Chittenden of Yale University, in regard to the effectiveness of thorough mastication of food in restoring perverted appetite to normal instincts, are corroborated by Professor Irving Fisher of Yale University in the report just issued describing one of a series of experiments he is conducting This report of Professor Fisher's shows that nine healthy Yale students who participated in the experiment doubled their working power physically and increased their mental capacity by strict attention to thorough mastication of food and obedience to the dictates of appetite. Under the chewing regime the appetite gradually called for less and less meat and other high-proteid foods.

The report of another experiment, which was with forty-nine flesh-eaters and flesh abstainers, has already been made public, and showed that those who either abstained from meat altogether or ate it sparingly had greater endurance than those who ate meat in the ordinary quantities.

Professor Fisher is an economist and not a physiologist, and is making these studies solely to get at the practical truth as to what the factors are which induce fatigue, for it is fatigue which sets the limit to the day's output of a man.

Professor Fisher is still engaged in his investigations, and other reports are to follow.



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Household Department

O, SAW YE THE LASS?

O, saw ye the lass wi' the bonny blue een?
Her smile is the sweetest that ever was seen;
Her check like the rose is, but fresher, I ween;
She's the lovliest lassie that trips on the green.
The home of my love is below in the valley,
Where wild-flowers welcome the wandering bee;
But the sweetest of flowers in that spot that is seen
It the maid that I love wi' the bonny blue een.

When night overshadows her cot in the glen,
She'll steal out to meet her loved Donald again;
And when the moon shines on the valley so green,
I'll welcome the lass wi' the bonny blue een.
As the dove that has wandered away from his nest
Returns to the mate his fond heart loves the best,
I'll fly from the world's false and vanishing scene,
To my dear one, the lass wi' the bonny blue een.—Richard Ryan.

THE BLACKBALLING OF BARBARA BEALS.

HAVE you heard, Jennie, about the time that the P. Q. P. club blackballed Mrs. Beals?" said Mrs. Bliss of Allenville one afternoon last summer, to her sister, Mrs. Starks, who was visiting her.

"The P. O. P. club and Mrs. Beals! I didn't suppose there ever was a woman's club in this old town. But if there is, why shouldn't Mrs. Beals join in it? I think she is a charming woman."

Mrs Starks had lived in a city since her marriage, and the village happenings seemed quite provincial from her new viewpoint, though she much enjoyed her sister's stories, as she generally knew all the principals.

"Indeed, Jennie, Mrs. Beals is all you say, and more; and she is now one of the most popular women in Allenville, but she was not always so well liked, though I always say that jealously was at the bottom of it all in the first place."

Mrs. Bliss paused and critically examined the last spray she had made in her embroidery. Seeing her sister's look of expectant interest, she resumed:

"You see, when Clarence Beals returned from college and stepped into the old doctor's practice, of course he was the best catch in town, and all the matchmakers, young and old, set traps for him. He was courteous and attentive to all girls, but showed no preference for any one of them, thus keeping them all on tenterhooks, as it were.

"For even the few who disliked him were flattered by his attention. Matters were at the stage when Clarence left town quickly and was gone several weeks. When he returned he brought his bride. The surprise was complete. Instead of trying to make it pleasant for the stranger, very few called on her, except some of us younger married people, with no grown up daughters.

"After a few weeks Martha Arnold proposed that we make Mrs. Beals a member of our club. The club was simply a social organization, but as it was well known that members were pledged to pay no attention to malicious gossip, outsiders called us the Patterns of Propriety, or the P. O. P.'s.

"I noticed suppressed excitement all over the room as Marie mentioned Mrs. Beals, and many significant looks were exchanged while the votes were counted. When the result was announced, there were only two votes in favor of the newcomer.

"Instantly all pretence of order was forgotten, as each member tried to explain her reasons for voting as she had done. In the confusion I caught scraps of conversation, and just for fun I took notes as I listened.

"'She's no lady,' 'played the banjo keeper's daughter,' 'played the banjo in the saloon,' 'dances the mignonette in fancy costume,' were a few of the charges. I was thankful Mrs. Beals was not present.

"When the clatter had somewhat subsided Martha requested quiet while she addressed the meeting.

"You remember how she always talks, 'hits straight from the shoulder,' Jack says, and she certainly did this time. She told us how suprised she was that such gossip should be so credited among the members, then she explained her own part in starting it.

"'Mrs. Beals,' she said 'is an accomplished musician. I mentioned to several people that I understood she had played her banjo at a number of salons in her native city, also that she had mastered the mysteries of the minuet.

"'If my hearers had been better informed or consulted a dictionary, instead of jumping at such ridiculous conclusions, this blackballing would not have occured."

"As a parting shot she reminded us that every member present except herself and one other was subject to a fine, according to the rules of the club.

"Everybody looked rather foolish when Martha stopped talking, till someone moved that we vote again. Then Mrs. Beals was unanimously elected.

"Old Mrs. Jamison suggested that the fines should be collected at once and the money devoted to a supper in honor of Mrs. Beals.

"The supper was a success, but somehow the blackballing story leaked out and the club broke down soon after.

"I'm almost sure Mrs. Beals got an inkling of the facts, but she was just lovely and never acted as if she had heard a thing. We are going to make her president of our literary and musical society this winter."—Boston Post.

Mr. B. and Mrs. B., having returned from social gathering where something occurred which very much angered Mrs. B. Stormy words passed, and Mrs. B. proceeded to call Mr. B. all the mean names she could, and ended the conversation by adding that if there was any mean thing she had not mentioned, he was that also.

"If I had my way," growled old Tightfist, as he opened his morning mail at the breakfast table, "I'd have a sign placed on every letter box in town." "What kind of a sign?" queried his wife. "One reading, 'Post No Bills,'" answered the old man.

BUT ONCE.

We pass this way but once
The ripened harvest white
Has waited long
The reaper's song;
Thrust in thy sickle bright.
We pass this way but once!
There's work divine for thee;
On every hand
The needy stand
And sigh for sympathy.

STAND STRAIGHT.

Did you ever try the little mental science trick of walking along with an imaginary star upon your chest and an imaginary basket of eggs upon your head? I know of no better way to acquire perfect pose than this. Simply fancy that the star upon the center of your chest is a real, scintillating thing and you will find yourself carrying your shoulders like a military man bent upon exhibiting his gold buttons. They say that a desire to display his gold buttons, after all, has more to do with the West Point Cadet's perfect carriage than any other one thing.

When you are about to sit down remember that you still carry that basket of eggs upon your head, and you find yourself sinking gently and gracefully into your chair instead of just hunching into it. The same little bit of mental science will work wonders in the manner of climbing stairs. One cannot twist or bend or do any of the other hideous things women usually do upon a flight of stairs—with a basket of eggs upon her head.

THE PEST OF ANTS.

Both ants and cockroaches are the sworn enemies of the bedbug, and as such are to be encouraged. If their services can be dispensed with, however, they to should be made to fold their tents and silently steal away. For the red ant, cayenne pepper is a discourager of attentions. Where the foundations of a house are low and the pantry of easy access, the ants appear as by magic. Under these circumstances apply the pepper to the pantry shelves under the paper covers and scatter along the floor by the windows or crack where the ants made their entrance. Locate their hill, which will be near the foundation of the house, and pour boiling water or kerosene oil into the opening of each hole. This is the most heroic method. It is also stated that an abundance of cold water persistently applied with the hose to a lawn where ant hills abound will ultimately drive the ants away. A moist sponge dipped in sugar or molasses makes an excellent trap for ants. As soon as full drop in hot water. Black ants can often be driven away by sprinkling ashes saturated with kerosene about their haunts, and new leaves of green wormwood scattered about the house will also send them off in a hurry.

FOR COUGHS AND COLDS.

A few drops of camphor taken on sugar every three or four hours will usually check a cold. A little camphorated oil rubbed well into the chest when a cough is painful will give great relief.

As long as you are shielded from draft an open window is no source of danger even on the bitterest nights.

A cup of hot linseed tea taken before retiring for the night is a good remedy, and will often prevent a cold.

Hoarseness may be relieved by using the white of an egg, well beaten,

mixed with lemon juice and sugar. Take a teaspoonful every hour.

Cayenne pepper tea is good for a cold. Take a quarter of a teaspoonful of pepper and nearly a teacupful of water, and drink it as hot as can be swallowed.

For a tight, hoarse cough take hot water often, as hot as can be sipped. This will give immediate relief. A little lemon juice added to the water is beneficial.

Sneezing is averted by pressing the upper lip, because by doing so we deaden the impression made on a certain branch of the fifth nerve, sneezing being a reflex action excited by some slight impression on that nerve. Sneezing does not take place when the fifth nerve is paralyzed, even though the sense of smell is retained.

Squeeze a large, clean handkerchief out of water and place in a wad on the pillow of the patient, an inch or two from his nose, so that he can inhale the moisture. He will usually cease coughing in fifteen minutes. While this treatment may not cure a cough it will insure a good night's rest to many a sick child and tired mother.

To avoid taking cold keep the circulation in good condition by regular bathing and exercise. Be careful about clothing and do not make sudden changes in it unless there is a decided change in the weather. To change from a high to a low neck garment or from high shoes to low shoes always involves risk.

WITH THE COOK.

Macaroni and Cheese.

This combination of macaroni and cheese is, of course, very well known, but very often it is not palatably served. In the first place, have good macaroni, the small kind is best, and break into inch lengths, and this should be boiled in a large quantity of salted boiling water, until very tender, and it should be kept boiling all the time. When tender, drain, and pour cold water over it. The usual sauce served with it is white sauce, made by melting two tablespoons of butter, blending two of flour with it, half milk and half water. A layer of the boiled macaroni spread in a baking dish, then a layer of finely grated stale cream cheese, or Parmesan, with salt and pepper, then a layer of the sauce and so on till the dish is filled. A pleasant and appetizing change, is to use a tomato sauce instead of the white sauce. This sauce can be made of the canned tomatoes—acid is very delicious to serve not only with the above, but with boiled rice, and with meats of all kinds, as well as oysters, which are not ordinarily very good, are very good served with the tomato sauce.

Tomato Sauce.

One cup canned tomatoes (or fresh), ½ cup water, 1 teaspoon salt, 1 teaspoonful sugar, ½ teaspoon celery salt, 1-8 teaspoonful red pepper or paprica, 1 slice onion, 2 whole cloves, ½ bay leaf, 2 teaspoon flour, 2 teaspoon butter.

Boil all but the butter and flour together until tomatoes are soft, and press through sieve, then add to the blended butter and flour. A teaspoon of Worchestershire sauce improves it for a meat sauce. This amount will serve only about three persons.

Substitute for Hollandaise.

A good substitute for the usual Hollandaise sauce served with fish is as follows: 2 tablespoons butter, 2 tablespoons flour 1 1-4 cup water or soup stock, yolk of 2 eggs, 1½ tablespoon lemon juice, 2 tablespoons minced pickle. Blend butter and flour, add water, cook until thick, add beaten yolks of eggs, and then lemon juice and pickle.

Very nice croquettes may be made from any left over salmon and boiled rice, mixed with a stiff white sauce.

HOMELY HINTS.

Lemon juice and salt will remove iron rust.

A hot lemonade taken before going to bed will cure a cold on the lungs.

Gargle a bad sore throat with a strong solution of lemon juice and water.

A cloth saturated in lemon juice and bound about a cut or wound will stop its bleeding.

When you want eggs to come to a froth quickly have them almost ice cold before you break them.

Lemon juice mixed very thick with sugar will relieve that tickling cough that is so annoying.

The juice of half a lemon in a cup of black coffee without any sugar will cure sick headache.

A strong unsweetened lemonade taken before breakfast will prevent and cure a billious attack.

Lemon juice added to milk until it curds and these curds then bound upon parts swollen from rheumatism will bring relief.

Moth patches may be removed by a lotion of salicylic acid and rose water—two ounces of rose water to half a dram of acid.

To make a damp cupboard dry stand in it a bowl of quicklime, which must be occasionally renewed, as it loses its power.

When feeling faint or the symptoms of heart palpitation, bend the head downward. Some persons cannot stand so violent a remedy, but it is effectual, as it allows the blood to run to the head.

Do not attempt to clean suede gloves with gasoline. Draw them on the hands and scrub with a soft, old nail brush dipped in fuller's earth. Some cleaners combine equal parts of fuller's earth and powdered alum.

When ink is spilled on a carpet sop up as much as possible with blotting paper. Then wash the spot with a piece of rag dipped in milk, changing the milk when dirty. When the ink has disappeared wash the spot over with ammonia and water and no stain will be left.

"GONE GOOSE" MELODIES.

Rock-a-bye, Abey, on the tiptop,
While the wind's fair the boodle won't stop;
But when the gang breaks the boodle will fall,
And down will come Abey, boodle and all.

* * *

Ba, ba, black sheep,
Have you any pull?
Aye, sir; each confession
Will wash some dirty wool—
Some for us and some, perhaps,
For Mayor Schmitz as well,
But none for the little man
That lives in the hotel.

* * *

Abe and 'Gene stood in between
The Board and every grafter;
The Board broke down and told the town,
And they came tumbling after.—San Francisco Call.

"How did you get that black eye, Willie?'

"I got dot," replied Willie, disgustedly, "by waitin' to count ten when I was angry, like you told me to."

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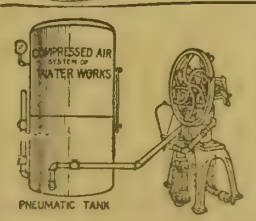

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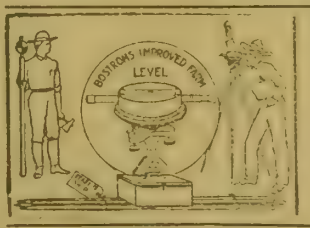

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S. C. WHITE LEGHORN EGGS FROM THE bred-to-lay Blanchard strain. Large birds, $1.00 for 15; $6.00 per 100; Free city delivery. C. M. GIBBS, R. F. D. No. 4, Los Angeles, Cal. Phone W. 591

POULTRY.

BARRED PLYMOUTH ROCKS, OCEAN Blue Strain. All our breeders for sale without reserve. Eggs, one-half price. Now is the time to buy your breeders for next year. We have lots of good ones. Write today. We live at Moneta, Cal. Take Redondo car, 2nd and Spring Sts., via Gardena. Get off at Illinois St. right on ranch. MR. and MRS. D. T. WIELAND.

SINGLE-COMB WHITE LEGHORNS, FINE white, large birds; good layers. Hatching and shipping chicks. Eggs for hatching; call and see, or write for particulars to MRS. D. F. STONER, Ontario, Cal.

INDIAN RUNNER DUCKS—EGGS AND stock for sale. Eggs, $1.00 per 13; $5.00 per 100; stock, $1.00 up. Black Langshan prize pen, $2.00 per 13. CLYDE J. MOSS, successor to F. M. Bender, Corona, California.

PARTRIDGE WYANDOTTES—C. ANDREWS 332 West Third street, yards at Hollywood, Cal., eleven prizes and silver cup at Poultry Breeders' Show 1907.

FOR SALE—FLOCK OF TWELVE GRAY Toulouse geese, $25 F. O. B. Address, A. WIMPERIS, Oceanside, Cal.

MACHINERY.

BARGAIN—3½-HORSE DIRECT CURRENT motor (connect with trolley; pump, saw wood or run machinery.) Good rope orange grader; rotary lemon or orange washer; Baker brusher; ton scales, pulleys, belts, shafting. All cheap enough to utilize in orchard or warehouse. PASADENA LEMON GROWERS' ASSN., Pasadena, Cal.

CHEAP FOR CASH—ONE 34-H. P. FAIRbanks Gas Engine in good condition, and can be seen in operation at our plant. AXELSON MACHINE CO., 1406 San Fernando St., Los Angeles.

FOR SALE—CHEAP FOR CASH—3-H. P. Hercules pumping engine in perfect order; as good as new. 943 N. MAIN ST., Los Angeles.

FOR SALE—THE EQUAL OF NEW 30- H. P. White & Middleton gasoline engine at a bargain. P. O. BOX 678, Station C, Los Angeles.

FOR SALE—AT A SNAP IN 25-H. P. FAIRbanks-Morse distillate engine in A1 shape. 943 N. MAIN ST., Los Angeles.

POULTRY FOODS.

ARMOURS BEEF SCRAPS, MEAT MEAL, and Blood Meal for poultry feeding are highest in digestible protein. If your dealer does not handle them write us direct. Circular containing formulae free. THE ARMOUR FERTILIZER WORKS, 736 H. W. Hellman Building, Los Angeles.

FARM LAND.

LAND BY WHICH YOU MAKE MONEY, because it costs but $18 to $25 an acre, with abundant water at 50c an acre. Easy terms. Grand crops. Good markets. Fare rebated. Address, W. R. GILSON, 333 I. W. Hellman Bldg., Los Angeles.

LADDERS.

"CHAMPION ORCHARD LADDERS" ARE the very best. Selected spruce. Malleable iron heads, painted. Light and strong. Many of the largest dealers handle them. Sizes, 6 to 20 feet. Price, 27 cents per foot. F. O. B., San Jose. Write for full information and description. H. H. EDMUNDS & SON, 8 Story Road, San Jose, Cal.

MISCELLANEOUS.

FOR SALE—SANTA MARIA DAIRY route, with or without cows; plenty of alfalfa available. No opposition. L. L. LANGLOIS, Santa Maria, Cal.

FOR SALE—$60—300 FEET 8-INCH SURface irrigation pipe, manufactured by Tallerday Manufacturing Co.; in excellent condition. Apply to A. HANDYSIDE, Duarte, Cal.

SIX HUNDRED FRUIT TRAYS FOR SALE cheap. Two by three; good condition. JOSEPH THORNDIKE, Pasadena, Cal.

Market men at San Francisco and Sacramento claim this is an exasperating season because of the fact that vegetables are so uncertain in supply. One day there may be a glut and the next the market entirely bare.

The Produce Markets

Los Angeles Markets

LOS ANGELES, June 26, 1907.—Trading in staple produce is about of the average and in fruits business was brisk. The greatest volume of transactions occured during the early hours of the morning so that by noon the fruit market was well cleaned up. The dairy market is rather weak owing to large supplies brought in by the high prices to which butter had been marked.

Butter.

The leading butter dealers of the city now admit that prices never should have advanced to 57½ cents this season. However, since the 57½-cent selling price was established they are anxious to keep prices at this level throughout the next two months, as a decline at the present will amount to no more than 2½ c, which has already been made by many dealers, and this reduction does not effect the price to the consumer as the retailer continues to sell at 60 and 70 cents per two-pound roll.

Creamery extra	55@57½
Creamery first	52½
Dairy	24

Cheese.

Cal. Young America, per lb	19
Hand	
California Anchor	18
Cal 3-lb. hand	20
Northern fresh	15¾
Domestic Swiss	23
Imported Swiss	30½

Eggs and Poultry.

Eggs also have taken a slight slump. They, like butter, were boosted by speculators somewhat beyond legitimate demands, and while the price was maintained for a few days, the natural law compelled a slight decline.

The prices given are those of the commission man to the retailer.

Eggs, local candled	23
Eggs, case count	21

The following are average prices which dealers pay to producers for live weight.

Hens, per lb	11
Young roosters, per lb	15
Fryers	17
Broilers, per lb	17
Old Roosters	7
Turkeys	17
Geese	12
Ducks	10
Squabs per doz	1.50@1.75

Live Stock.

The following quotations are f. o. b., Los Angeles, on all stock.

Hogs, from 175 to 200 lbs	7½@8
Prime steers	4¼@4½
Hiefers	3½@4
Calves per lb.	5
Sheep, ewes, per head	4.75@5.25
Lambs per head	4.50@5.00
Wethers	5.50

Potatoes.

A prediction of an early decline on potatoes is made by many this week. Others claim that firmness will prevail. In any case dealers are cautious about buying.

Colorado	2.00
Oregon,	1,80
New, Early Rose	2.00@2.30
New, white	2.00@2.25

Onions.

Onions have advanced heavily but as other sections than Imperial are heard from a decline will result.

Silver skins per ctl	2.00@2.40
Imperial per sack	3.55
Garlic	12

Vegetables.

Asparagus lb	12½
Artichokes	65@80
Beets per doz	30@40
Bell Peppers green lb	20
Beans wax	3@4
Beans green	3@4
Cabbage sack	75
Celery, Hothouse, per doz	1.50
Chili peppers green	12½
Cucumbers, per 20 lb. bx	1.00
Corn per bx	60
Cauliflower	1.25
Carrots per doz	30@40
Egg Plant per lb	15
Green Onions, doz bunches	10@30
Lettuce, per crate	50@75
Mushroons per lb	1.00
Peas, sugar, per lb	4@6
Okra, per lb	20
Rhubarb per box	1.65@1.75
Radishes per doz	15@20
Spinach, per doz	10@15
Summer squash crate	25@40
Tomatoes per basket	50@1.50
Turnips, doz bunches	40
Water Cress per hundred	40

Citrus Fruits.

Valencias	1.50@2.75
Navels	1.25@2.50
Grapefruit Seedless	2.00@2.50
Grapefruit Seedlings	1.25@1.35
Seedlings	1.25@1.50
Lemons, fancy	2.00
Lemons, choice	1.25@1.50
Tangerines, halves	1.50@1.75

Fresh Fruits.

Apples, Ben Davis	1.50@2.00
Apples, Red Astrachans, box	90@1.25
Pearmains	1.75@2.00
Apricots	1.25@1.50
Blackberries	3½
Currants per 4 bskt crate	1.10
Cherries, loose	11@15
Cherries black	1.25@1.50
Cantaloupes Ponies	2.00
Cantaloupes st	2.00@2.50
Figs black per lb	10
Grapes, per 4 bskt crate	1.75
Gooseberries per lb	8
Logans	5@6
Loquats	2½@3
Peaches, per bx	75@1.00
Plums	1.25@1.35
Raspberries	5@8
Strawberries	2@3½
Watermelons per lb	2

Dried Fruits.

Evap. Apples, fancy per lb	8½@10
Apricots	20@22
Peaches	12½
Pears	13
Prunes, 40s to50s	7½@8
Prunes, 50s to 60s	7
Prunes, 60s to 70s	6½
Prunes, 70s to 80s	6
Raisins, layers, 3 Crown, 20 lb bx	2.00
Raisins, clusters, 4 Crown, 50 lb bx	4.00
Raisins, clusters, 4 Crown, 20 lb bx	2.25
Raisins, clusters, 5 Crown, 20 lb bx	2.75
Raisins, clusters, 3 Crown, 5 lb bx	90
Raisins, clusters, 6 Crown, 20 lb bx	3.50
Raisins, clusters, 6 Crown, 5 lb bx	1.00

Beans, Dried

Limas per ctl	5.30
Pink No. 1	3.00
Lady Washington	2.90
Small White	3.20
Black Eyes	5.50@6.00
Garvanzas	5.75@6.00
Lentils	12½@15

Honey

The prices we give are those at which the jobber sells to the grocer in small lots. The producer should take from this one cent a pound commission and freight to Los Angeles, and there will remain the net returns to him.

Extracted White	6
Light Amber	5@5½
Comb, water white, 1-lb. fms	12@15
Light Amber	10@12

Nuts.

Almonds per lb	19@25
Peanuts, Virginia	9
Peanuts California	6@7
Walnuts, No. 1 S. S.	14@15

Hay.

Barley, No. 1	14.50@16.50
Barley, No. 2	11@12
Alfalfa Northern per ton	13.00
Alfalfa, local	12.00
Alfalfa new	12.50@13.00
Plain oat No. 1 new	13@14
Wheat No. 1	12@14

Grain.

Purchasing prices f. o. b., Los Angeles are:

Wheat, new, per cwt	1.70@1.75
Wheat, Sonora	1.52½@1.57½
Barley	1.17½@1.22½
Corn, Eastern, sacked	1.50

Feed Stuff.

Selling price F. O. B. Los Angeles as follows:

Cracked corn	1.65
Shorts	1.45
Bran	1.30
Egyptian corn	1.65
Rolled Barley	1.40
Feed meal	1.70

San Francisco hay merchants have petitioned the Southern Pacific asking the company to refuse to haul any new hay into that market until the old hay is gotten out of the way. Six thousand five hundred tons of last year's hay crop are still stored in the local warehouses. This room is badly needed for the storage of this season's crop.

E. J. Prien is investigating sugar beet conditions near Yolo.

San Francisco Markets

Butter.

SAN FRANCISCO, June 25, 1907.—Butter shows a slight shading from last week, being quoted ½ cent lower. At present conditions are good with promise of recovery.

California ex per lb	24½
California firsts	23½
California seconds	23
Packing stock	22½

Cheese.

California, Young America, fy	14
California, flats, fancy	13¼
Eastern fancy	18½

Eggs and Poultry.

Dullness is emphasized throughout entire poultry trading. But it is quite as satisfactory as it had been for several days preceding. Dealers made large concessions, but were unconcerned whether stock sold or not as they do not expect business to deteriorate in any greater degree than it has already.

Fresh ranch eggs	23
Eggs, first, per doz	20
Eggs, seconds, per doz	18
Eggs, thirds	17
Hens, per doz	5.00@5.50
Hens large	3.50@6.00
Young Roosters	7.00@8.00
Old Roosters	4.00@4.50
Fryers, per doz	5.00@7.00
Broilers, per doz	3.50@4.00
Ducks, young	4.00@6.00
Geese, per pair	1.75@2.00
Turkeys, per lb	16@19
Pigeons	1.25@1.50

Live Stock.

Steers No. 1	7½@8
No. 1 Cows and Heifers	6½@7
Hogs, 80 to 200 lbs	7½
Hogs 200 to 300 lbs	7
Calves per lb	4@5
Lambs yearlings	6½
Wethers, No. 1	5½@6
Ewes, No. 1	5@5½

Potatoes

The supply of potatoes is decidedly stronger in the trading tone, but figures were about the same as on the last day of the preceding week.

Salinas Burbanks ctl	2.50@2.75
Oregon Burbanks	2.50@2.75
Rivers	1.00@1.60
New potatoes, Early Rose	2.50@2.75
New white,	2.75@3.00

Vegetables.

Generally speaking, the vegetable market is in no particular degree altered from the previous week. Quotations are nominally the same and the demand is less certain. Supplies on hand, while in some instances light, are greatly in excess of requirements.

Asparagus	8@12½
Cucumbers per box	1.00
Corn per doz	25@40
Chili peppers green lb	20@30
Green peas per lb	4½@5
Squash per box	1.00@1.50
Peppers Green Bell	20@30
Rhubarb per box	1.00@1.25
Tomatoes Mexican	1.00@1.25
Tomatoes California	1.00
String beans	4@5
Wax beans	2@2½

Onions.

Onions new Reds	2.65@2.75
Onions Br Australia per ctl	3.50@4.00

Citrus Fruits.

The Valencia oranges are still bringing a satisfactory price for the best variety, but sales are of diminutive proportions. Lemons of the best quality are taking lower figures than formerly, but the lower varieties are nevertheless as much in favor as ever, and while selling is quite abundant the receipts more than equal the demand, so quotations are well sustained. Grape Fruit meets with a dull inquiry and low prices rule.

Lemons	1.00@4.00
Navels	1.50@3.00
Seedlings	1.25@1.75
Grapefruit, seedless	1.75@3.00
Limes	4.50@5.00

Fresh Fruits.

Apples are slow to sell and supplies are generous, but dealers hold firmly to their asking figures. Grapes were held well in hand at sustained rates. Peaches are slow to sell and steady in prices. The supply of berries is heavy, but the best grades hold securely to Saturday's quotation.

Apples per box	1.00@1.50
Apples new per box	1.00@1.25
Apricots per box	1.00@1.50
Blackberries per chest	4.00@5.00
Currants, per box	50@75
Cherries, blk	75@1.25

Cherries, white per box	.75@.80
Cherreis, per lb	.8@10
Gooseberries per lb	.8@10
Grapes per crate	2.25
Logans, per chest	6.00@7.00
Melons per crate	1.75@2.25
Plums per box	.50@1.00
Peaches per box	1.00@1.25
Raspberries per. chest	3.50@7.00
Strawberries per chest	8.00@10.00
Watermelons per lb	.5

Dried Fruits.

Apples (evap.)	6½@8
Apricots per lb new	.20@25
Figs, white	4@5
Prunes four sizes	4@5
Peaches	10@13
Pears	7½@12½

The f. o. b. quotations on the 1907 raisin crop, October delivery, have been announced as follows: Fancy seeded, 12-ounce cartons, 6 5-8c; Choice seeded, 16-ounce cartons, 7¾c; Choice seeded, 12-ounce cartons, 6¼c; Loose Muscatels, 3-crown, 6 3-8c; Loose Muscatels, 2-crown, 5¾c; Seedless Muscatels, standard, 5 5-8c; Seedless Sultanas, unbleached, 5¾c; Seedless Thompson's, unbleached, 6¼c; Imperial Clusters, 3-crown, $3.00; Dehesa Clusters, 5-crown, $2.50; Fancy Clusters, 4-crown, $2;London Layers, 3-crown, $1.40; London Layers, 2-crown, $1.30.

Beans, Dried

Limas No. 1	5.25@5.35
Pink	2.30@2.50
Large White	2.40@2.65
Black Eyes	4.90@5.00
Red Kidneys	3.50@3.75
Bayo,	2.85@3.00

Hops.

Fancy, 11c; choice, 8@10c; prime, 7@8c;common, 5@6 per lb.

Nuts.

Almonds, new	17½@18
Peanuts, California	5½@6½
Walnuts	12@16

Honey

Clear White Comb	16@@16½
Amber	12@15
Extracted	5@7
Beeswax, per lb	25@30

Hay.

Alfalfa local	8.00@11.00
Oat	18@20
Wheat No. 1	21.50
Wheat, No. 2	13@17

Grain.

There is practically no change in trade conditions of the local wheat market. The millers are in the market for all the desirable grades of milling wheat obtainable and they are paying full quotations. Barley sells fairly well, but while prices are weaker and lower, the standard is still too high for any movement in the export trade.

Wheat, No 1	1.50@1.52½
Barley, No. 1	1.20@1.22½
Corn, small yellow	1.55@1.60
Corn, yellow	1.45@1.50
Oats, White	1.55@1.75
Oats, Red	1.60@1.75
Bran, per ton	20.00@22.00
Straw, per bale	.50@.70
Feed Corn Meal, per ton	32.50@33.50
Cracked Corn, per ton	33@34
Oil Cake Meal, per ton	40.00@41.50
Cocoanut cake, per ton	27.50@28.00

Citrus Market

LOS ANGELES, June 26, 1907.—Oranges are still insisting on a good finish for the season. Firmness prevails in practically all markets, with good demand for all better grades. Valencias are pressing their claims more each day and sweets and other budded fruits are being cleaned more and more out of the market.

Lemons are strictly favorites. The weather has been made to order and the boost so long waited for had the desired effect so that lemons are on the top shelf as to prices. The demand is keen at all markets.

Shipments.

Shipments to date aggregate 24,039 of which 2397 were lemons. Last year same date 23,554, of which 2906 were lemons.

NEW YORK, June 24.—The market is practically unchanged. Thirty-one carloads of oranges and one carload of lemons sold here today.

NAVELS—

Fountain Ch F H Speich	$2.85
Swastika Or Gr Cash As	2.60
Santa Fe St F H Speich	2.40
Arch Ch Hawarden Citrus As	2.45
Sweetheart xf H G Ft Ex	3.55
Lochinvar xc R H Ft Ex	3.20
Stork xc S A Ft Ex	2.55
Blue Globe xf Riverside Ft Ex	3.40
Eagle xc H G Ft Ex	2.90
Golden Rule xc Riverside Ft Ex	3.00
Quail xc H G Ft Ex	2.90
Parrot xc S A Ft Ex	2.45
Lion Head xf Lyon & Sons	2.80
B Keystone Ch King Ft Co	2.40
R Keystone St King Ft Co	2.10
Sunshine Grove Bowen Ontario	2.50
Flower or Upland Dis	2.05
Standard St Upland Dis	1.80
Columbia Ch National Or Co	3.05
Standard St National Or Co	2.70
Columbia Ch National Or Co	3.20

ST. MICHAELS—

A1 or Edmund Peycke	2.85
Deal .... Edmund Peycke	1.75
Royal Knight xf R H Ft Ex	3.40
Old Mission Ch Chapman's Full't'n	3.75
Golden Eagle St Chapman's F'l't'n	3.50
Whittier xf Redlands Junction	3.70
Whittier Ch Redlands Junction	3.50

CRAFTON LATES—

Rose or Redlands O G As	2.80

MEDITERRANEAN SWEETS—

A1 or Edmund Peycke	2.10
Deal .... Edmund Peycke	1.40
Parrot xc S A Ft Ex	2.85
Slover Mt or Colton Dis	2.90
Slover Mt or Colton Dis	2.95
Whittier Fy Redlands Junction	3.30
Whittier Ch Redlands Junction	2.85
California Orange St Riv Ft Ex	2.10
White Star xc Worthley & Strong	2.00
Mocker or Spence Ft Co	2.45
East Highland xf E H Citrus As	3.05
East Highland Fy E H Citrus As	2.60
East Highland Ch E H Citrus As	1.80

SEEDLINGS—

Titus Ranch xc S Marino Gr Pk Co	2.35
El Toreador St S Marino Gr Pk Co	2.00
Rose or Redlands O G As	2.95

BLOODS—

Red Globe xf Riverside Ft Ex	2.65
Parrot xc S A Ft Ex	3.00

VALENCIAS—

Old Mission Fy Chapman's Ful'ton	4.35
Old Mission Ch Chapman's Ful'ton	3.45
Golden Eagle St Chapman's F'l'tn	2.75
Valla Vista Fy Hemet Dis	3.55
Valla Vista Ch Hemet Dis	2.75
Independent or Highland Dis	3.45
Independent St Highland Dis	3.10
Blue Flag xf Spence Ft Co	3.40

VALENCIAS (halves) — Fountain $1.70. NAVELS (halves)—Mahala $1.95; Cerrito $1.50. GRAPEFRUIT (halves)—Cerrito $1.85; Whittier Fy $2.30; Independent Fy $1.40. GRAPEFRUIT—A1 $1.30@1.10; Gold Buckle $2.50; Whittier Ch $3.30; Independent Fy $3.90@2.65; Ch $1.65; East Highland $1.45@4.95. TANGERINES—S. Buckle $1.80. LEMONS—Independent Fy $4.25; Ch $3.65@3.40; St $2.80; Blue Flag $3.05. ST. MICHAELS (halves)—Blue Globe $1.65.

BOSTON, June 24.—The market is very strong and higher. Weather hot. Thirteen carloads sold and nineteen carloads on tracks.

NAVELS—

Quail xc O K Ft Ex	3.05
Quail xc O K Ft Ex	2.30
Quail xc O K Ft Ex	2.95
Lochinvar xc R H Ex Highland	3.20
Stork (resold car)	3.25
Golden Rule xc Riverside Ex	3.10
Blue Globe xf Riverside Ex	3.60
Cosmos Fy S B Ex Yerkes	2.70
C S O St S B Ex Yerkes	2.40

ST. MICHAELS—

Squirrel Fy A H Ex Prenda	4.00
Red Globe xf Riverside Ex	3.40
Red Globe xc Riverside Ex	3.05
Blue Globe (halves) Riverside Ex	1.90

BLOODS—

Squirrel Fy A H Ex Prenda	3.55
Palm Tree xc A H Ex Prenda	3.20
Blue Globe xf Riverside Ex	3.05
Red Globe (halves) Riverside Ex	1.70

LEMONS—

Whittier xc S T Ex Whittier	3.35
Pico St S T Ex Whittier	3.30
Rossmoyne or E M Moss	3.50

GRAPEFRUIT—

Squirrel Fy A H Ex Prenda	4.40
Cosmos Fy S B Ex Yerkes	4.00
West Highland Fy Highland Dis	2.95

VALENCIAS—West Highland Fy $4.15. SWEETS—Mohawk $2.30; standard $2.15.

CLEVELAND, June 24.—The market is firm on good stock. Weather stormy. Eight carloads sold.

NAVELS—

Golden Rule, xc Riverside Ex	$3.15
Golden St Riverside Ex	2.15
Blue Globe xf Riverside Ex	3.45
Squirrel Fy A H Ex Prenda	3.30
Palm Tree xc A H Ex Prenda	3.25
Spanish Girl St A H Ex Prenda	2.55
Quail xc O K Ft Ex	2.80

LEMONS—Corona Beauty $3.60; Grove $3.00; Whittier $4.00; Pico $4.15. SWEETS—Golden Rule $2.65; Angel $3.20; La Belle $2.50. ST. MICHAELS—Golden Rule $3.85; Squirrel $3.75; Palm Tree $3.65; Blue Globe, 3.25; Red Globe $3.10. BLOODS—Angel $2.95; California Orange $2.05. BUDDED—Golden Rule $2.30@2.50; Red Globe $2.45. VALENCIAS—Golden Rule $3.30. GRAPEFRUIT—Palm Tree $2.85.

ST. LOUIS, June 24.—The market is firm on good stock and weather warm. Seven carloads sold; eight carloads on tracks.

NAVELS—

Green Crown St Riverside Ex	3.00

VALENCIAS—

Whittier Ch S T Ex Whittier	3.55
Pico St S T Ex Whittier	3.60
Don Quixote St S T Ex Alhambra	3.40

LEMONS—

Club Ch S T Ex Ocean Park	4.40
Valley St S T Ex Ocean Park	3.75
Lemonade St S T Ex Ocean Park	3.75
Lone Tree	3.25

SWEETS—

G Fruit Fy Redlands G O As	3.00

SEEDLINGS—

—Golden Rule xc Riverside Ex	2.90
Golden St Riverside Ex	2.30
Alhambra xc S T Ex E Alhambra	3.25
Don Quixote St S T Ex E Al'mbra	2.80

PITTSBURG, June 24.—The market is very strong and the weather very hot. Twelve carloads sold.

NAVELS—

Quail xc O K Ft Ex	2.75
Lark Ch O K Ft Ex	2.80
Owl St O K Ft Ex	2.40
Blue Jay St O K Ft Ex	2.15
Blue Jay St O K Ft Ex	2.65
Red Globe xc Riverside Ex	2.95
Lochinvar xc R H Ex E Highland	3.35
Belt St R H Ex E Highland	2.70
Jasmine St D M Ex Duarte	2.65
Yankee Doodle Highgrove Ex	2.60

SEEDLINGS—Our Pride $3.20; Yankee Doodle $2.95; Jasmine $2.80; Titus Mountain Lion $3.75. ST. MICHAELS—Our Pride $3.25.

Commissioner Pease of San Bernardino County says that "several power sprayers are operating against the Florida red spider. They are using the sulphur-potash solution which has always proved satisfactory in this section."

A large dredger working near Folsom was wrecked in a peculiar way last week. In its work it dug into an old mining tunnel which took the water away from it, leaving it hopelessly stranded on dry ground.

The grape vines at the experiment station near this city are giving promise of an abundant yield this season, which reminds us that there is no country better adapted to the vineyard than that in this immediate vicinity.—Tulare Register.

The County Horticulture Commission of Yolo county held its first meeting this month. The pear blight was one of the principal points discussed, which developed from the discussion that apricot and almond crops will be especially light.

Mr. L. M. Landsborough of Florin, Sacramento County, is experimenting with two acres of tobacco.

Northern Sacramento valley sections almost invariably report good fruit crops.

Some magnificent wheat has been grown this season in the Moreno section east of Riverside.

COOL WATER WITHOUT ICE.

A picnic without Appell's South African water bag? Well, hardly, when once you have had one along, on a tramp or long trip of any kind.

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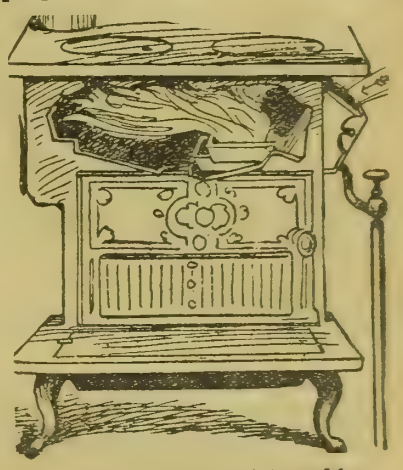

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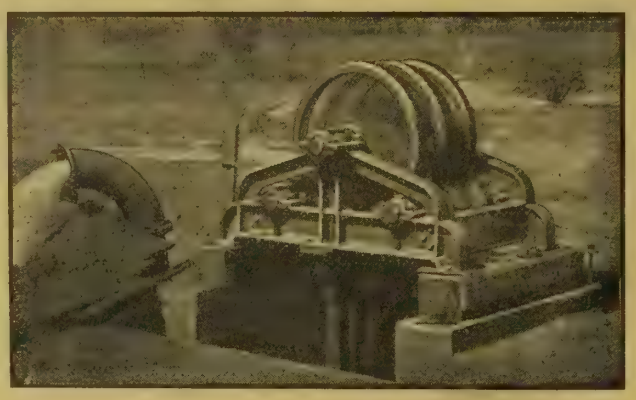

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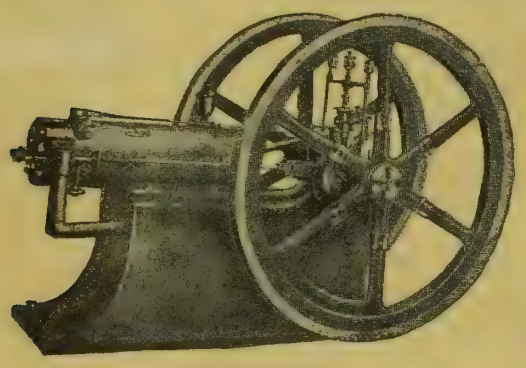

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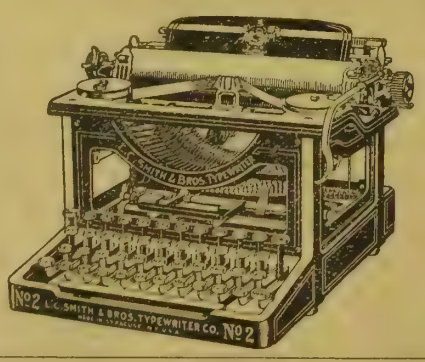

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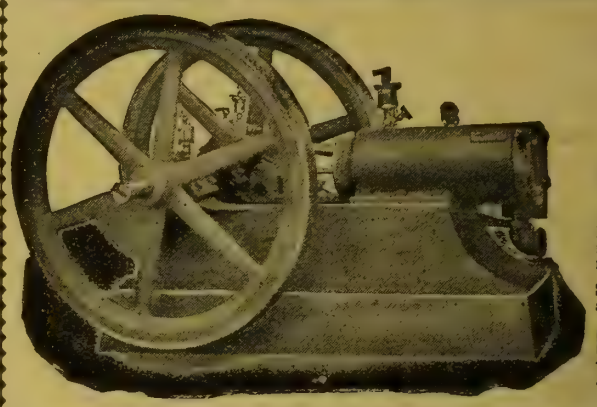

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